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ABSTRACT

The six major conference papers collected in this document focus on developing ways of facilitating equity and academic achievement in a desegregated setting. The psychological impact of fostering these expectations among multicultural populations, methods for involving minority students in a science and math high-tech curriculum, and methods for increasing achievement in language usage in a culturally diverse setting are among the topics considered. Paper titles and authors are the following: (1) "Equity and Excellence in Science" (C. Hardeman); (2) "Equity and Academic Achievement in a Culturally Diverse Setting" (A. Zimmerman); (3) "Equity in Science and Mathematics" (H. L. Brown); (4) "Academic Achievement in a Desegregated Setting" (R. R. Weaver); (5) "Language Approach to Cultural Diversity" (M. Applegate); and (6) "Who Declared War on Excellence in Education?" (J. Scribner). The conference program and biographical sketches of participants are included. (KH)

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1984 DELAWARE SPRING REGIONAL WORKSHOP

"EQUITY AND EXCELLENCE: A RESPONSE TO A NATION AT RISK"

Wednesday and Thursday

May 2-3, 1984

Radisson Hotel

700 King Street

Wilmington, Delaware

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Ogle B. Duff, editor
Assisted by Herman J. McClain

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RACE DESEGREGATION ASSISTANCE CENTER

DIRECTOR: Dr. Ogle B. Duff

ASSOCIATE DIRECTOR: Dr. James Mauch

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The Center is a service of the School of Education of the University of Pittsburgh. It is funded by Title IV, Section 403 of the Civil Rights Act of 1964, to assist school districts in examining problems of school desegregation relating to instruction, curriculum, administration, school personnel, and in planning projects that effectively deal with such problems. The Center's services are available to all eligible school districts in the states of Pennsylvania and Delaware. Further information is available by calling: (412) 648-7194

1984 DELAWARE SPRING REGIONAL WORKSHOP

"EQUITY AND EXCELLENCE: A RESPONSE TO A NATION AT RISK

May 2-3, 1984

RATIONALE: As national attention is focused on education and the high tech race goes international, interpersonal issues remain critical to many educators. Methods must be developed and implemented which will increase achievement and at the same time provide a forum for enriching the quality of interpersonal relations among a diverse population.

> The twin goals of equity and high quality schooling have profound and practical meaning for our economy and society, and we cannot permit one to yield to the other either in principle or in practice. To do so would deny young people their chance to learn and live according to their aspirations and abilities. It also would lead to a generalized accommodation to mediocrity in our society on the one hand or the creation of an undemocratic elitism on the other.[1]

We must advance education on the fronts of both equity and excellence.

OBJECTIVES:

1. Participants will be provided with a model which facilitates the equity and academic achievement in a desegregated setting.
2. Participants will be given insights as to the psychological impact of expectations, self-esteem and achievement in desegregation setting.
3. Participants will be given strategies for involving minority students in a science and math high-tech curriculum.
4. Participants will be given methods for increasing achievement in language usage in a culturally diverse setting.

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[1] A Nation at Risk: The Imperative for Educational Reform, The National Commission in Education, April 1983, p. 13.

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FOREWORD

The "imperative for educational reform" is more than the subtitle of A Nation at Risk, the recent report of the National Commission on Excellence in Education. The imperative sounds an undeniable challenge to all school districts who are experiencing any frustrations and failures in their ongoing efforts to provide equal and excellent education to multicultural populations.

The Race Desegregation Assistance Center of the University of Pittsburgh welcomes the opportunity to interact with the Brandywine School District, the Christina School District the Colonial School District and the Red Clay Consolidated School District, as well as other school districts in Delaware as these school districts strive to provide the requisites for their children who may be at risk.

To that end the Center assembled a group of experienced and committed educators to present some theoretical and much practical information for teachers, counselors, and principals during a two-day workshop. The presenters spoke to the critical issues of intercultural understanding and interpersonal relationships.

Workshop participants studied models for facililtating equity and academic achievement in culturally diverse settings, developed strategies for involving more minority students in mathematics and science, and examined methods for increasing proficiency in language usage among culturally diverse youngsters.

The Center expresses sincere appreciation to the speakers, to the workshop leaders, to the Delaware Department of Public Instruction, to all participating school districts, to workshop support personnel, to teacher/counselor/staff attendees, and especially to the school administrators in attendance. Without their participation any workshop would be useless for the school administrators are the education leaders who accept the challenges for equity and excellence.

THE PROGRAM

May 2, 1984

8:15 a.m.- 8:45 a.m.	
Registration	Dr. Cynthia Peterson, Staff Specialist Race Desegregation Assistance Center University of Pittsburgh Pittsburgh, Pennsylvania Ms. Gloria Grantham, Liaison University of Delaware Newark, Delaware
Danish and Coffee	
8:45 a.m.-11:30 a.m.	GENERAL SESSION I New Castle Room
Presiding	Dr. James Mauch, Associate Director Race Desegregation Assistance Center University of Pittsburgh Pittsburgh, Pennsylvania
Greetings	Dr. William Keen, State Superintendent Department of Public Instruction Dover, Delaware Mr. Horacio Lewis State Supervisor of Human Relations and Coordinator of Race and National Origin Desgregation Projects Department of Public Instruction Dover, Delaware
Opening Remarks	Dr. Ogle B. Duff, Director Race Desegregation Assistance Center University of Pittsburgh Pittsburgh, Pennsylvania
Introduction of Speaker	Dr. James Mauch, Associate Director Race Desegregation Assistance Center University of Pittsburgh Pittsburgh, Pennsylvania

May 2, 1984 (continued)

Presentation	Dr. Carole Hardeman, Adjunct Professor University of Oklahoma Norman, Oklahoma "Equity and Excellence in Science"	
11:30 a.m.-12:25 p.m.	Luncheon	Hoornkill Room
12:25 p.m.-12:30 p.m.		
Introduction of Workshop Presenters and Directions for Workshop Sessions	Dr. Marion Poole, Staff Specialist Race Desegregation Assistance Center University of Pittsburgh Pittsburgh, Pennsylvania	
12:30 p.m.- 2:15 p.m.	WORKSHOP I	See Workshop Schedule
2:15 p.m.- 3:45 p.m.	WORKSHOP II	
3:45 p.m.- 4:00 p.m.		
Wrap-up and Closure	Dr. Ogle B. Duff, Director Race Desegregation Assistance Center University of Pittsburgh Pittsburgh, Pennsylvania	

WORKSHOP SESSIONS

May 2-3, 1984

12:30 p.m.- 2:15 p.m. and 2:15 p.m.- 3:45 p.m. Wednesday
8:45 a.m.-10:45 a.m. and 10:50 a.m.-12:45 p.m. Thursday

Session A George Reed Room	EQUITY AND ACADEMIC ACHIEVEMENT IN A CULTURALLY DIVERSE SETTING Mr. C. A. Zimmerman, Principal Shaker Heights High School Shaker Heights, Ohio
Session B Ceasar Rodney Room	EQUITY IN SCIENCE AND MATH Dr. Herman Brown, Assistant Superintendent Halifax County Public Schools Halifax, North Carolina
Session C Newcastle Room	ACADEMIC ACHIEVEMENT IN A DESEGREGATED SETTING Dr. Roosevelt Weaver, Principal Nassau School East Orange, New Jersey
Session D Newanstel Room	LANGUAGE APPROACH TO CULTURAL DIVERSITY Dr. Mary Applegate, Assistant Professor Education Department St. Joseph's University Philadelphia, Pennsylvania

THE PROGRAM

May 3, 1984

8:15 a.m.- 8:45 a.m.		
Registration	Dr. Cynthia Peterson, Staff Specialist Race Desgregation Assistance Center University of Pittsburgh Pittsburgh, Pennsylvania Ms. Gloria Grantham, Liaison University of Delaware Newark, Delaware	
Danish and Coffee		
8:45 a.m.-10:45 a.m.	WORKSHOP SESSION III	
10:45 a.m.-10:50 a.m.	Coffee Break	
10:50 a.m.-12:45 p.m.	WORKSHOP SESSION IV	
12:45 p.m.- 2:45 p.m.	Luncheon	Hoornkill Room
	GENERAL SESSION II	
Introduction of Speaker	Dr. Marion Poole, Staff Specialist Race Desegregation Assistance Center University of Pittsburgh Pittsburgh, Pennsylvania	
Presentation	Dr. Jay Scribner, Dean School of Education Temple University Philadelphia, Pennsylvania "Equity and Excellence in a Culturally Diverse Setting"	
2:45 p.m.- 3:00 p.m.		
Wrap-up and Closure	Dr. Ogle B. Duff, Director Race Desegregation Assistance Center University of Pittsburgh Pittsburgh, Pennsylvania	

x

STAFF ROSTER

DIRECTOR:	Dr. Ogle B. Duff
ASSOCIATE DIRECTOR:	Dr. James Mauch
STAFF SPECIALISTS:	Dr. Cynthia E. Peterson Dr. Marion L. Poole Dr. Samuel Werlinich
ADMINISTRATIVE SECRETARY:	Ms. Yvonne M. Jones
WORKSHOP COORDINATORS:	Dr. Ogle B. Duff Dr. Cynthia E. Peterson

We wish to express our appreciation to Red Clay Consolidated School District for their assistance in meeting our audio-visual needs.

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BIOGRAPHICAL SKETCHES

Dr. Mary Applegate

Dr. Mary Applegate is visiting assistant professor and director of the reading curriculum center and the reading clinic at St. Joseph's University, Philadelphia, Pennsylvania. Prior to that she had been assistant professor of education, director of the ACT program, and instructor in communication skills for the graduate program in human services at Lincoln (PA) University. Dr. Applegate has been a first grade teacher, a remedial reading teacher, a learning specialist in the coordination of reading and language arts and mathematics, and an instructor in undergraduate courses in reading and study skills. She earned her doctor of education in educational psychology and psychology of reading at Temple University.

Dr. Herman L. Brown

Dr. Herman L. Brown received his doctorate in education from the University of Cincinnati. He was formerly an associate professor at the University of Miami, teaching in Florida and in the Bahamas. Currently he is an assistant superintendent for instructional services for Halifax (NC) County Public Schools, having been previously the superintendent of Jefferson Township School District in Dayton, Ohio. In elementary schools, Dr. Brown has been a teacher, a supervisor, an assistant principal, and a principal. He holds membership in the American Association of School Administrators, the Council for Exceptional Children, and the Association for Children with Learning Disabilities.

Dr. Carole H. Hardeman

Dr. Carole H. Hardeman is president of Adroit Publishing, Inc., in Oklahoma City. Two major publications are Sounds of Science, a multidisciplinary, multicultural science careers curriculum and The Math Connection, an interdisciplinary mathematics careers curriculum. Dr. Hardeman is adjunct professor in the College of Education and the Department of Human Relations at the University of Oklahoma and past director of the Southwest Center for Human Relations Studies. Over a three year period she wrote five proposals on equity issues, received more than $750,000 in federal funding therefor, and implemented the proposals. She is a member of the American Educational Research Association, the Association for Supervision and Curriculum Development, and the American Association of School Administrators, and an executive board member of the National Alliance of Black School Educators. Dr. Hardeman has been the major speaker or a panel presenter at national and state conferences and has been a staff development trainer for public schools and universities. She earned her doctor of philosophy degree in education administration and human relations from the University of Oklahoma.

Dr. Jay D. Scribner

Dr. Jay D. Scribner is the dean of the School of Education, Temple University. He received an Alfred Morris Whitehead Fellowship when he attended Harvard University. He taught for ten years at the University of California at Los Angeles. The writer of many articles and books on educational quality and leadership, he is currently the editor of Education in Urban Society and the president of the Politics of Education Association. Dr. Scribner has been involved in programs of education in China, Jamaica, Morocco, and Nigeria.

Dr. Roosevelt R. Weaver

Dr. Roosevelt R. Weaver has been honored as one of North America's 100 Top Executive Educators. He is the principal of Nassau Elementary School in East Orange, New Jersey. He earned his undergraduate degree in sociology and physical education at Yankton (SD) College and his graduate degrees in educational administration from Harvard University. He has been a high school teacher, track coach, a peace corps volunteer in Senegal, a community center program director, and a part-time college instructor. Dr. Weaver is vice chairperson of the Community Leaders Advisory Board of Rutgers University and a member of the New Jersey Education Association and the National Education Association.

Mr. C. A. Zimmerman

Mr. C. A. Zimmerman holds degrees from Mount Union College, Bowling Green State University, and University of Toledo. He has done additional studies at Kent State and John Carroll Universities. He has been a junior high teacher, a senior high counselor, an assistant principal, and for the past five years the principal of Shaker Heights (OH) High School.

EQUITY AND EXCELLENCE IN SCIENCE

Dr. Carole Hardeman

In "Sounds of Science" we do have a stated objective and a stated purpose. I would say that, if there is one stated purpose for the three years development of this curriculum, it is to help young people--regardless of what other people have made young people think that they can become--to help young people develop self-confidence that they can be anything that they want to be if they apply themselves. To illustrate that, I think of the story of the second grade student in art class. The teacher said, "You can draw anything you want to. I will give you 30 minutes to draw it and 30 minutes to color it. Then I'll come around and talk to you about what you have drawn."

The teacher went to one student. The student said that the drawing was his Daddy's car, that it was red, and that it took his Daddy to work and back. The next child said that his drawing was his dog Fido who wagged his tail and caught a ball when the lad threw it. The teacher approached a little girl and asked what she had drawn. The little girl said, "I've drawn a picture of God."

The teacher responded, "But we really don't know what God looks like, do we?"

"We might not," the little girl replied, "but, after everyone sees my picture, everyone will know what God looks like."

That's real self-confidence and strong self-concept.

To start this presentation, I would like to show you one of the audio visual presentations from "Sounds of Science" and then tell you something about it. I have an outline here as you can see. It is as much a problem for me as it is for you to discipline myself to stick to outlines, to do as little explanatory talking as possible so that you can actually see the materials. It will be easy for me to stay on the interesting aspects of our finding the role models for Forensic Science and

to go into great detail on what the children do with Forensic Science after they have seen it motivationally, but I'm going to stay on the outline. I will show you the workbook that goes with Forensic Science. When we get to the bottom of the agenda and the question and answer cards, if you want to know about some of the lessons in any particular module, I'll be happy to show them to you. Usually for me to show a group of people what "Sounds of Science" really is takes a whole day as you can well understand. This is the student workbook, and this is the teacher workbook that goes with the forensic unit. I will tell what I think are two of the most interesting lessons in the unit.

The first is the Betty Gatles bit where she does the skull. Children take a chicken, boil the bones, glue the bones back together, and end up with the plaster of Paris and the severing of them. The children can make the feathers out of paper. Going through the process helps them to understand the difficulty of a person taking bones and having to identify the bones. We give the children a drawing that is the inside of every joint of every chicken.

The other most interesting lesson is the children getting to do a finger print. They see their finger prints emerge from a piece of paper when they did not intend to give their finger prints. I don't know what the material is that goes into the plastic bag, but every child in the classroom gets a plastic bag. After the children have shaken the bags for a while, there are the finger prints. The children get a chance to identify the finger prints from their own classmates.

The presentation that you have seen is actually from a big screen, from a film strip cassette. We found that so many things can go wrong when taking equipment around that we brought the video cassette making it a little difficult for those of you in the back to see.

What is "Sounds of Science?" By the way, I do have some information sheets for you that you can get at the end of the presentation. "Sounds of Science" is a multicultural, multidisciplinary audio visual curricular approach to careers in science and technology for middle school girls and boys. "Sounds of Science" can be used as the supplement to any basic science textbook. It is meant to be used as a supplement.

What is the purpose of "Sound of Science?" The purpose is to enhance boys' and girls' understanding of the relationship of school science courses to the real world of science and technological careers. So often in the middle school science classroom and in junior high, a teacher with elementary credentials can teach any subject in middle school or junior high. That's the way it is in Oklahoma; that's the way it is in many states. Quite often teachers are assigned to teach science who may have had but about three hours study in it. Quite often they don't know the relation of what's in science textbooks to real careers. Students want to know why they are doing certain things and who does that. Not only in science but all through school, quite often students cannot wait for the bell to ring at 3:30 so they can enter the real world. That is not the way that school should be. Science is life and science is the real world.

"Sounds of Science" is supposed to show youngsters the relationship of what they are doing in science to real careers. It helps them to see that, yes, they too can become scientists. We have people who have physical disabilities; we have women; we have men; we have people who grew up in poverty. We did not put all these people on all the audio visuals and in all the materials, but we did many of them. We selected 32 role models from over 350 nation-wide who filled out many questionnaires. Most of them said that at the age of 13 they were lonely, they

really did not feel that they were winners.

Thirteen and fourteen are terrifically difficult ages to be. We know about all the physiological changes that children are going through at that time. It's a rough age. Many youngsters at that time really are at the cross roads of finding who they are. They are beginning to wean away from mother and trying to find other friends. It's difficult to find friends at that age because they are all so scared and wondering what is going on inside their bodies. The youngsters see role models of people who are successful who say to them, "When I was your age, I was a loner; I did not have any friends." One person tells the youngsters that he had a hard time making friends because he moved so often. Everytime he made some friends, the family moved again; so he fell in love with books, and books became his friends.

What is "Sounds of Science's" major objective? The major objective is to suggest to students some processes from which they can move from their present world of the middle school to careers in science or technology. For this reason, each student activity reflects the career activities of a "Sounds of Science" role model. Is there a need for more emphasis on science in American education? I think that we can all say yes to that. I don't think to this group of people that I need to expound on the need for more science education. American educators are going to have to take drastic steps to change the attitudes of children.

We did a survey on a nation-wide questionnaire when we developed our first curriculum mathematics mode. We would think that seventh graders would have more realistic ideas about what they think they want to be. Fifty percent of the girls wanted to be models, movie stars, secretaries, and flight attendants. Please believe me. The bodys wanted to be police officers. Many of the Oklahoma lads wanted to be in the rodeo. They did not have realistic career ambitions.

Now, every one is excited about mathematics and science and technology. The word, so we are saying to children, is be an engineer. Many youngsters don't have the vaguest idea of what an engineer is or does. The average child in junior high or middle school, when it comes to anything in the world of science, thinks that an engineer is some robot with soft skin in a white laboratory coat that is unapproachable. They think it's someone who likes cats, too. If children are a little younger, they think an engineer of course drives a train. They don't know what a chemist is. The biggest thing middle school children know about the computers is the video. Many really realize that the people who do the programming for the video games are getting rich. Many youngsters who have computer programming in their school still know little about computer professionals.

What we have tried to do in "Sounds of Science" is show the career role model. If we had had more money and time, we would have made real movies in living colors. We show the scientists in their job activities, how they got to where they are. When we present a group of successful people to youngsters, the youngsters want to know how, if they live in the projects in Chicago, can they get to the ocean to be an oceanographer? We try to show them the process and the way it is not really impossible. We emphasize that one does not have to be a straight A student or a genius to become a scientist because most of ours were not. Our scientists tell our youngsters that they were not geniuses, but that they just worked hard at it.

I shall show you the next audio visual now. Actually, the Environmental Sciences is the first module that all classes should use because the Environmental Sciences audio visual gives our philosophy about all "Sounds of Science." From

there on it does not matter which is next. I used the Forensic Science because I thought it was fun. It's the only one that I think is fun, but I think they are all worthwhile. Everyone has a favorite; my favorite one is Medicine and Health Sciences. If you get a chance to see it today, you might know why.

The "Sounds of Science" curriculum has several components. There are four modules: Environmental Sciences, Forensic Science, Medicine and Health, and Energy. Each module includes a teacher manual, a student workbook, a classroom experiment based on the career and professional experiences of each role model and personal experiences from men and women of all races who have overcome physical disabilities or poverty or racist attitudes to become successful scientists, career education pamphlets, five colorful wall charts, and a composite chart of the 32 career role models. We don't try to preach race and sex; we don't want really to preach race equity. When the children have to go to look at the wall charts, a realization filters into the subconscious; yes, we can do this even though I'm Hispanic, even though I'm a woman, I'm poor. Some realization gets in there just as some of the media invade the subconscious too.

Some awful messages are sent out especially to Black children and to native American children. I am so sick and tired of hearing people on the Johnny Carson Show make reference to wild Indians and to Pocahontas in red paint. We all know why people refer to Indians only as wild and crazy and war painted. That's the way Indians have been treated in the media.

These are the colorful wall charts. These wall charts would look prettier if they were not messed up with these pictures, but the charts were not designed for the art classroom. They were designed so children will go to see the pictures of these people. Some of our role models are little people. That's the way life should

be anyway. This is George Lindeman, a research technician for Ford Motor Company. The thing is that we should not look at what his disability is; we should be looking at the results of what he can do.

Here is one for Forensic Science. I must tell you about two of these role models. One is Linda V. Tilmon, a forensic serologist who jarred the state crime laboratory in Atlanta, Georgia. We were trying to get this woman to be one of the role models for a lesson designed around her. She promised to send her picture and other information, but instead she could not be a role model. Her supervisors had to go through the script that we had written based on the questionnaire she had returned; we sent it back and forth, they made the changes back and forth. Finally, we got their signature. They had to agree to every thing we said. The back and forth took two years. Linda could not give us a go ahead. She's the one who did the work up on those fibers for the Williams murder case in Atlanta.

Have you heard about the new technique for determining, by the size, shape, diameter of the blood splatter, where a body was at the time that it was shot? Judith Bunker developed the technique. In a case in Oklahoma, a woman's husband had been murdered. She contended that a burglar had shot her husband and that she had gotten the husband into bed. There were blood splatters on the floor. By using the technology of Judith Bunker, the authorities were able to determine that the body was standing up at the time that it was shot and that the wife must have done it. The youngsters get a chance to work with red food dye. They get a chance to be detectives with blood splatter. They get a chance to do many things. This is the wall chart for Environmental Science; this is the one for Medicine and Health.

Another career component is "Sincerely yours." This one I love. It is a book

of letters, signed letters. You will never know how we conspired to get the signatures. A letter from each role model tells the children even more information about each scientist. We have a graph after each model that shows the children the relationship of the years of study to the thousands of dollars earned. Here is an example from Forensic Science. The anthropologist is not that far out there on the earnings graph, and yet the professor is working on his doctors degree. We try to impress upon the children that money is not everything. All our role models say that there is nothing else in the world that they would do. They have a great deal of satisfication on their jobs. Money is not everything. If a student does want to go for a certain income, the graph does give him an idea of what he can make. We also have a chart of how long it will take to get to that point.

A teenager not doing well in a science class stays up studying every night instead of going to the counselor asking to drop the course. You and I know the likelihood of his getting permission to drop if this child is from the home of one of the community leaders, is well dressed, is looking studious, than someone looking ragged and from a broken home that asks about dropping a science course. You know what I mean. That child can hardly get the words out of his mouth before the drop card is drawn out because some children are not recognized as potential scientists. You have people teaching in your schools who you think are looking at your students as you do, who are receiving those children as potential anything. That is not always so. I hope you can find a replacement for those teachers if you need to.

Children in their early teens don't feel too good about themselves anyway. It is that crucial middle school time when children are getting ready to fill out the schedules for senior high school and the courses they will take the first year in high

school that almost determines their future. Someone must step in there and do something. If the child decides to take general mathematics in the tenth grade, that's all she wrote.

Now it is time for us to see something else, the Environmental Sciences audio visual presentation. This is a 15 minute motivational presentation which serves two purposes. It introduces the environment module as well as introducing "Sounds of Science." One of our unwritten goals in "Sounds of Science" was to reverse something that the media have done. You would have had to walk a mile in my shoes to understand my true feeling about this, the terrible and insidious media image that the Black male does not love his wife and children and that Black parents are not homemakers for their children. The message throughout Black movies and Black television is always a house without a father. If one is a human relations specialist, as I am supposed to be, it does not matter where we get the grant--from women's equity, a state department, National Science Foundation--when dealing with music and images, we have a chance to get a message across. A message that we tried to slip into "Sounds of Science" concerned Black males. We did not make it up. This is the way Black males are, the ones that I have come in contact with. The Black males alluded to that one thing they love to do on their leisure is to spend time with their families. That is written in their own handwriting. So we try to bring this fact out because it's time for the world to know it, especially little Black children. This gives little Black boys another image to look forward to, another impetus to grow up and be real men and to take care of what is theirs.

I am going to skip the next two AV's. You probably have seen enough audio visuals. I don't want to put you to sleep. Medicine and Health is the AV that

projects many role models with physical disabilities.

I have not told you about any science careers. Just as I have learned all this information in dealing with "Sounds of Science," so you can become extremely knowledgeable as you use the curriculum. I am not trying to sell a program to you; I am trying to sell a concept. "Sounds of Science" is no complete answer to the problem of getting children to study, but it can help to get children excited about science. This program can be developed in your own school, in your own community. The purpose is to get science out of the textbook, to make science come alive in any way that can be done. That's the idea that I'm trying to sell.

The Medicine and Health audio visual presents a maxillar facial surgeon whose body stops right here at his waist. Viewers see him getting into a car. He tells the viewers that at their age he had legs just as they do, that he was a stock boy in a grocery store. After amputation, he decided he would not let that change his life. The film shows a woman scientist helping stroke victims or people in wheelchairs. She helps people who have become disabled to learn how to drive a car and to operate a wheelchair so they can get a job and live normal lives. At the end of the segment, she says that she knows about disabilities. She tells the young viewers that when she was their age she lived a normal life until she contracted polio. Now she walks with crutches. She gets around slowly, but she gets around anyway. She reports that she loves to cook outside for her family, cooking in her barbecue pit in the backyard with her apron on and with all of the outdoor cooking utensils that people use. She keeps emphasizing the normal lives that disabled people lead.

Nancy, a biochemist, tells us that an inflammation took away her hearing at the age of 13, but that she went on and kept to her goals. She got her bachelors,

masters, and Ph. D. although she was sick. She says that one would think that her greatest accomplishment in life was getting adopted while deaf, but that was just the beginning.

Statements like this say something else to youngsters who may have read so much or heard so much or experienced so much from their subconscious to the effect that, if they are poor, they cannot be anything or if they are minority, they cannot be scientists or if they are girls, they cannot be scientists. The students reason that, if someone could do all this and be deaf, surely no one should let race and sex be a handicap. All of these people have something to tell the youngsters. The children say that, if they can do it, I can too.

Let me try to summarize what "Sounds of Science" is all about. As you can see, it is more than just science. It is about our love for children. It is about the values of those of us who are educators trying to put ourselves in the shoes of these children and knowing when something is going on good and feeling good about it.

We can give children a bit more to feel that there is a reason for their being and that there is a reason for them to study hard.

It is important to have a good relationship with what goes on in the classroom and what goes on in the real world. The message to students is that, regardless of their life circumstances, they too can learn to be a success if they want to be.

EQUITY AND ACADEMIC ACHIEVEMENT IN A CULTURALLY DIVERSE SETTING

Mr. Al Zimmerman

An evening tutoring program is something we started about five years ago. It is open to all children in the school district. On elementary level, we have a building with a tutoring center four days a week, Monday through Thursday, 4:30 in the afternoon until 7:00 in the evening. We have tutoring for secondary students, seventh through twelfth grades. Any one from the commmunity may drop in at any time. We pay our teachers ten dollars an hour for tutoring at a center. The one thing that makes the program possible is that we have teachers tutoring who are still in the building. They can teach one hour a night; whatever they want to do.

The program we found really took off and helps us in another way. We have a community that focuses on the point that students are all going to college. Students better have the grades with the skills that go along with that. So it is easy for us to get teachers to teach at the particular level. Another thing that we do is go to local colleges. You can do that here, too. We pay five dollars an hour for any college student who wants to tutor in our program. We have discovered some college students out there who do not have to have certain certification in anything. They can have a good skill. For a couple of years my son and daughter-in-law tutored at our program at night. My daughter-in-law is a chemistry major, and my son is a biology major. Both were eager to do this community work. Because junior high students are young and my son and daughter-in-law themselves are young, they enjoy that kind of actitity. The tutoring center has been helpful and productive throughout the four years. (if you have any questions, I will be glad to respond to you.)

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We have busing at the elementary level; we have no busing at the high school level. We are in a community of 33,000. Our rapid transit is our busing system. The

trolleys that run actually bisect the community. Students get reduced fares on buses and the rapid transit to get to school. The fartherest a student can be from the high school is about four miles. Many students drive in that type of setting. The problem is that we provide only 97 parking spaces for a driving population of about 1400 students. The parking once was easy because student council ran it. They gave all parking spaces to seniors. Other students started to question things. Our junior students and those sophomores who had drivers licenses said, "Wait a Minute. We don't want to have the parking privilege just for the seniors; we want the privilege for everyone." Now we have 97 cars getting to school early in the morning. Maybe a quarter to eight will be the time to find a parking space. Some of our students, I really believe, are devious about the whole thing. They park illegally and pay their parking fees once a year to the police department, maybe about a $150. It costs me $50 to have my parking spot. That is a little better than Beverly Hills high school where the cost is about $250 a semester.

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With regard to the first four or five years and the racial mix, I would say that, if I see anything, the mix will probably stay as it is. We are competitive. It will cost $6,000 a year to go to a private school in our area. That in itself is a major obstacle, although to some people it is not. Our high school has received recognition over the last five years. People are coming back to the public high school. We have just brought back a great number of children from the Catholic schools who saw one thing, the money they were paying.

Another thing is that, no matter who they are, as they go into the smaller private schools, there are some things students really give up. They give up school

activities for one thing. One of the major focuses we have--this is off the subject a little--is a speech and debate group that was started with six or seven students about five years ago. The group has about 80 members at the present time. We are flying eight students to San Antonio in June to compete in the national. The neat thing about the speech and debate program is that there has been active recruiting of minorities to go into that group as well as the other students who focus on that kind of thing any way.

I have an orientation program in February for ninth graders. One thing I do--I have tired of the lecture series--is have the counselors there and the other administration. I say to parents--we do usually invite the children--this is our program, these are the requirements, this is what students take if they want to go to college. Typically one parent in our group will ask, "What does my son or daughter have to do to become eligible to go to Harvard University?" That question kills the conversation for the entire evening. I spend a half hour on that.

I touch upon five different groups in our school activities program. We have a special choral group, and we have an acting group. The speech and debate group I make sure gets the sophomore students. I want to make sure that minority and majority focus is there. A dance group of about 150 students is well integrated, having both males and females. Three or four years ago a great number of our athletes were getting involved including the captain of the football team. I do not know how students like these got drawn into the group, but they do a marvelous job in the dance area. These groups become the program of the evening.

My invitation goes out to both students and parents. By the time the students get home, they are sky-high about the activities that are going on. The parents have received a book that lists the requirements that students have to fill. Thus it is difficult to swing students into going into another area. It is like transfering school districts. Once students find a common ground and a common bond, peer group in a

way forces them to do an awful lot things. So consequently breaking up a lot of things that occur is more diffcult.

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My focus to pick up a student below a two point average is mainly a focus on minority youngsters. They come to us as ninth graders. The ninth grade student has a double-edged sword. You probably know this if you are organized ten through twelve as senior high and seven through nine as junior high. The ninth grader in our school district has regularly two things happening: first, he does not want to achieve and second, the teacher will not fail the youngster; the teacher will give the youngster a "D" to go on to high school. The teacher will get rid of that rascal. The same thing happens at the sixth grade level I would imagine.

When the youngster comes to us, we have three years of work with him. We start to work on him with the focus on trying to get the youngster to a two point average at the end of the sophomore year. We do that with about 50 percent of the students. We get them to a two point average, but we do not always promise to continue that kind of program. The closer we can get those students there the better off we are.

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The learning disabilities program in the high school is well mixed. Our learning disablilities comprise three units in our high school with a wide range of students in that area. We hve main-streamed so many of the youngsters that we have very few special education students in our high school. They are in our regular programs in some way.

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The makeup of the faculty is about ten percent minority and going down. I have two pregnancies, both Black young women who are taking leaves of absence. I lost a teacher of English to a doctoral program last year. I ask today, as yesterday, where are some minority people who would like to apply for jobs. They are not being found,

and finding them is becoming much more difficult. We went to Boston two weeks ago. We have a national recruiting basis. We go out nationally. On some of the difficult things we must do that. We are not unique. I know that. When I go to Ohio State University, with 60.000 students about three percent are minority students. If I go to any major university in this country, it is exactly the same thing. Cleveland State Univesity, a local university in the urban area of Cleveland, has ten percent minority. Consequently, by the time the minority individuals respond to the different programs that are out there, there is very little left in education.

Minority parents in the community keep after us all the time for these things. I do not hesitate to call the president of that organization, as I did this past week, indicating that I shall need 15 teachers this year in the high school.

Can you recommend any minority candidates? I mention Ohio State as a university that is open to everyone, which should have a larger minority population. Our state university system does not make any difference to which campus one goes. Finding and keeping minority teachers are difficult things to do; so we do all the things that we can for minority enrollment and employment.

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With athletes we go by the state standard in Ohio. If a student has no more than two absences, he or she is eligible to play on any athletic activity. There are probably few students who get into that particular level. I have discussed with one group something which I think has some merit. I have to go a little further with it. It is call the "D" rule.

Because we have a tutuoring center, can I force a youngster to go to the tutoring center if in fact he has a "D"? This is something the superintendent and I are discussing at great length. A student has a "D" in English. He has to go to the tutoring center to bring the "D" up to a "C." The "D" may be in science, whatever. All we are trying to do is to help that youngster get back on track.

I think that athletics have a great value for students who may not be in the "C," "B," and "A" range. To deny a youngster the possibility of being able to participate in an activity, I think, is another thing that is pushing the youngster out the door. We have less than a two percent drop-out rate; so we are not feeling that it is a measureable portion, but that again depends on who gets dropped out. I do not want to include that kind of a drop-out at all. So our programs with the tutoring and the pushing self-help force the youngster to get the better grade.

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No, the program does not cost anyone anything. As far as parents are concerned, with children, often the parent must bring the student here. It depends on the level of interest.

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Five or six groups came into the building within the last year. Once two teachers from a Chicago suburban high school came in for two days. The reason they came was to see what was going on in a high school that has our kind of facilities. Their description of our school was that here was a school whose teachers through their pressure were trying to do better, that, in fact, the teachers had so much peer pressure on them that they wanted to do better all the time.

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We have a one to two percent drop-out rate in the high school. I would say probably better than half would be Black youngsters. I would say even 75 precent.

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Infromation I received recently was ACT testing. Now ACT is not a big testing activity in our school district. The farther west one goes the bigger ACT testing gets. From the information I recall the average income of Blacks was in the $45,000 range, the average income for whites was $60,000 plus range. We find that in the high school maybe five youngsters are on some reduced lunch program. We do not have that kind.

Sometimes the youngsters, particularly at the high school level, will not let us know they need reduced lunches. That varies and the reason for it varies. We continue to work with students if a student has a one point three average. We know how difficult it is to raise it to a two point in one year. The longer we work with that student, the longer he goes to school and the less more difficult it becomes.

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We do not have a National Honor Society. There is some merit in not having a National Honor Society, but I am not saying one way or the other. One of the administrators has National Honor Society where there is teacher input into the society. A teacher sometimes can be the worst enemy of the student and says, "Look, that kid fouled up in my class; there's no way I'm going to recommend him for National Honor Society." We had many students who earned a 3.5 average or better recognized and awarded at an activity in the evening until to about three years ago. The next morning after the awards ceremony I received the question, how many minority youngsters were there? I was talking about seven, eight, nine, and ten, something of that nature, out of maybe 80 students. The idea I had, whether it was good or not, was I just told all the students that I had not told the parents yet. I recognize all youngsters who have a 3.0 average or better, 3.0 to 3.49 for the principal's certificate, 3.5 and above for the honor student. We recognize all youngsters that same night which increases my minority representation by 10 to 15 percent. This is more than I have seen in some other situations. I think that is significant.

I have a nephew who is a tenth grader. He has a 2.3 average. There is no way on God's green earth that he will be a 3.5 student unless he gets a 3.0 or better. And Paul is not about to do that. He says, "I'm a good students, so what. What's wrong with a 'D' average. It's never gonna become a 'B' average."

Here is a reachable goal for many youngsters where the other is totally

unattainable. Another part of the whole book is that of academic achievement.

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Several years ago I grew a little tired of hearing superintendents, assistant superintendents, and principals telling students at the assembly what they need to do in the next several years. I was a counselor in the 60's. I thought we needed to bring back the students who had been out of school for 10 years to whom these present students could relate. The former students could tell what had happen to them in those ten years. So on an evening I bring back former students from throughout the country, one or two, usually two, for the possiblility of their talking to the present students and their parents.

About 1956 or 57, a group had funded a speaker's forum. The money that is there is now used solely for bringing back the students. That is what I use the money for, about five or six hundred dollars a year.

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We are trying to do what the television program indicated yesterday, that is get role models for youngsters. I do not care who they are; if they are fine role models, we will get them into the school in some way. Sometimes getting them costs us a little money; other times there is no cost.

One thing that we do with the PUSH Program is simply to be visible all the time.

EQUITY IN SCIENCE AND MATHEMATICS

Dr. Herman L. Brown

Thank you. Let me try, in this span of time that I have, to say some things to you about excellence, equity, and education. I will say in the outset that maybe our notions of equity are limited. You see, we felt that, when schools were segregated, we would bring about equity by desegregating schools. Now, I've worked on many desegregation cases, helping to write the plans in Cleveland, Ohio, Chicago, Columbus, Ohio, Michigan, Missouri, and other places. All we were doing was setting up a procedure for moving together bodies of different racial and economic backgrounds. We were not dealing with equity.

We can have situations in classrooms where students are of the same racial or economic background and not have equity. Equity has to do with the learner, the needs of the learner, and the approaches we take to satisfy those needs; and they're not always the same. If there are some students who are working on things they don't have the acquired skills or the conceptualized skills to utilize to solve the problems, then we don't have equity. In other words, we have many students who've worked at levels of frustration, who really don't understand what they're doing. And we cannot have excellence until we get some equity in those kinds of things.

Then let me share with you from A Nation at Risk, a report by the National Commission on Excellence in Education, that we've talked about so much and is probably the basis for this whole session that we're having for these two days. There were some essential messages given in that report, and I have pulled them out just to share them with you.

The first was that of technological threats. This country for a long time did not have competitors. The country was not overtaken in the fields of commerce,

industry, science, and technology. We know the story about the automobile industry. We started buying foreign-made cars, and the automotive industry in this country went down. Finally the industry said they could build cars to compete. Late reports show that all three of the major motor companies in this country are making profits again. Chrysler's going to pay back its debt to the government--a loan to them for ten years--in five years, and Lee Iacocca, the president, is going to get bonuses that value 5.5 million dollars. All the others are getting big bonuses now, and we're beginning to ask what it's all about. The industry wants to get all these profits now, but we paid for all that. We're getting a better product, but the whole thing is that in America we've slipped, and we have decided that we can do better.

Look at the steel industry in Pittsburgh. I was in Pittsburgh maybe two months ago. I can't believe that all of those big smoke stacks are gone. In Birmingham, Alabama, and the area where I grew up below that in Tuscaloosa, Alabama, all of those things have gone. So we're threatened.

Another message that was given is that of mediocrity in education, not excellence, based upon the following data:

- 23 million American adults are functionally illiterate.
- 13% of U.S. teenagers and 40% of minority adolescents are functionally illiterate.
- Between 1963 and 1980, there was a virtually unbroken decline in the average scores on the SAT.
- Between 1975 and 1980, remedial mathematics courses offered by four-year colleges increased by 72%.
- Only one-fourth of the recent recruits into U. S. armed forces were able to read at the ninth grade level.

We said at one time, if one could read at the sixth grade level, that was

survival. So we moved the level up to grade nine. Now, because the minimum that's necessary to read and follow safety directions is ninth grade, one-fourth of the people are not surviving. So it seems that we've fallen back; something has happened to us.

Another thing that was cited in this report was some of the successes we've had in American education. The report talked about some of the things that had been done in the nineteenth century by colleges and universities. While we have had success -- the report is saying that we have proven in the nineteenth century that we can do it in America--for some reason we're not doing what we should be doing at this point.

What I want to share with you, then, this morning are some of my ideas about what we can do to get equity and excellence. I will talk basically in the area of mathematics and some science. I do more work in the area of mathematics, but these things can be related to any area.

First of all, I think that in teaching we have to do something in higher education. Our current programs are not appropriate for what teachers are asked to do. I don't know if you agree with me. I just feel that after teaching nine years, having come through myself, and looking at the needs of students that I faced, I didn't learn any of these things. You see, we don't teach diagnostic prescriptive techniques. We have some special people who go back somewhere and learn that. I've seen some here in these sessions. Are there any in here, diagnosticians, they call them, I guess in Delaware? I was glad to hear that. We should all be that, but who teaches us to do that?

I want to show you a few other things this morning we have to begin to look at and analyze. We have to make teaching a technology. We have to be able to talk about the fine line, new parts that make up the total theme we're looking for. We have to stop saying that this child cannot read. We have to understand why. So

we have to go back and examine the situation. The things we have to look at first of all are the minute things. We know, in order to read, one must be able to recognize the graphic structure and reproduce certain sounds of the letters of the alphabet. Right? But when we talk about it, we just say she can't read. We ought to be saying that this young lady has difficulty in recognizing the graphic structure of the letter "m." She also has difficulty in reproducing the sound of the "m" in isolation. And we say "m" doesn't give a sound, but we go on and do something. We say only vowels give sounds. We ought to know, when those letters in the alphabet are put with other letters, we can formulate a word, whether or not the young lady knows how to recognize and reproduce the sounds in the initial, the middle, or final positions. Is that right? Now we're talking in a technological sense. We're trying to find out where the breakdown comes.

In mathematics, it's not that she cannot add. We can ask what is it she can't add? Teachers look at me and say, what do you mean? I say, do you mean that she cannot add, that she doesn't know basic facts, that she can't add a one digit to a two digit, or mean a one digit and a one digit? Basic facts are adding a one digit and a one digit. I say, are you talking that the person cannot add a two digit and a one digit without regrouping? What are you talking about? We haven't said these things. We need to be more specific by saying what particular concept cluster: adding zero to a number which is the additive identity, adding one to a number, adding two to an even number, adding two to an odd number, adding doubles both as ends of the same. Are we talking about relating double one as one more than the other, or are we talking about tens when we take one from one as is and make the other ten, or are we just talking about other basic facts like eight plus four that don't fit these categories?

Now why do we need to know that? If I'm teaching adding, this isn't enough just to mark this answer wrong. If I'm going to teach, I say that this shows me that

the student doesn't know all addition facts but does know some of them. The student knows adding a related double, the student knows adding doubles, and the student knows adding one to a number. I need to know the specific one that the student doesn't know. If I have them grouped, I can say to the student, this is what you need to work on, adding zero to another number, the additive identity. So we work on that particular group; we don't do the whole one-hundred. We're minimizing now. We are saving time, and we're getting to the point. We get that worked out. We can do that normally in a class period or so, and we don't stay on that forever.

We stay on things forever because we don't know what's exactly wrong. We go back over the whole thing; we even convince the parents.

"Tell your father. . ."

"Your son is a nice lad, but he just hasn't memorized the basic facts."

"When you get home, son, upstairs, no television; you don't ride your bike; no movie, you're on probation until you learn all those basic facts."

Mother feels sorry and goes over the whole thing with son. At school the next day what happens ? Teacher's saying, "My god, he can't add."

Mother says, "But he went over all of them last night. Maybe he's just frightened in the classroom."

We're not dealing with the right things. We taught adding a one digit to a one digit. That's what the lad revealed, but the teacher gave him a two digit and a one digit. We gave him a definition of addition and said addition is putting two things together. So he added six plus three and got nine. He had to put the one with something because he had to add it. So he added nine plus one and got ten. We said he doesn't know his addition facts, and we stayed on him. We made him believe he didn't know anything. We said he tightens up when he takes a test and when he gets in the classroom. The psychologist needs to come in and test him. Something's wrong with him. Then we label him LLD, MHD, MH, FH, everything.

We knew from the very beginning the diagnosis was wrong. His problem was not basic fact; it was place value. He was adding the one's digit to the ten's digit because no one had taken the time to identify his difficulty. I found that to be the problem in so many cases; yet we blame the youngsters. Many youngsters I've seen have been labeled, but we've put the label on the wrong person. The psychologist tested the wrong person. It should have been some of us.

America has the most sophisticated youngsters in its schools today that we've ever had. Watch the electronic game rooms. You see, once we get a perception about something, we interact with the people that we work with according to those perceptions. We believe that children can't learn because they're on welfare, the mother collects ADC, the child has one parent. I hear that so much. My god, I think that a lot of people came from one parent. There are a lot of them that came up with something less than welfare. There are those who came through when we didn't have welfare. They were below the welfare line, but they didn't call it that. What happened to them? You see, we want to blame the youngsters in all of that.

Someone asked me why did I want to go to Halifax County where all those peanut farmers were? Those youngster couldn't learn. A person who had come from the state department said to our administrators that the department had found a correlation between achieving and welfare. I jumped straight out of my seat. I said, "No sir. You need to go back and run your data through again because, if that were the case, a lot of us wouldn't be here." I continued, "They may be on welfare economically, but their brain is not on welfare. The brain is the thing to get them off welfare, and I don't want you talking to our principals that way."

If we've decided such a matter and if we have that in our mind, look how many special education classes we'll have. When I was in school, we didn't have special education. Schools didn't know anything about that even though there was

a person in my class whom I remember. I'll never forget him. He sat by the heater and got the coal all the time for the big stove. All the school did was get him a larger desk every year, from second grade until he was drafted into the army. I remember he came back and told us about boot camp. We didn't know what he was talking about. He had on polished brass; he was looking good. We asked him what did he do. I remember his telling us that he peeled spuds and pulled KP and got paid. Yes, he had some money. We thought that was great. We don't do that now. We moved from that, recognizing individuals. Somewhere along the way in our minds we put people into categories.

I could take these two young ladies in the classroom. The father of the one is vice president of a bank; the father of the other lives across the tracks, works for the city, and is known for profanity and boozing all night. I don't know a thing about either. But watch my behavior. I'm coming to class. Who teaches fifth grade in here? Do you still teach the states and the capitals? I never had my children memorize those things and I taught fifth grade three years. I did it a different way. I know how to find capitals. I doubt if I could find time to memorize them. But, I ask the one young lady what's the capital of Mississippi? She sits and looks at me. I say, "Come on now. Just relax. I know you've been out playing hard. Maybe we should have had social studies before recess, but just relax. You know you know it." She looks at me. I continue, "Don't you remember we had a famous American with the nickname of Stonewall. Do you remember that?"

She answers "Jackson."

I say, "I knew you knew it. Just you relax now. You're O. K."

I come over to the other young lady. "What's the capital of Alabama?" She looks at me. "That's O. K., sweetie. What's the capitol of Alabama? Thank you." Can you see the difference?

Is that equity? Is it? No. Because of my perceptions, I can't allow equity to

happen. I can't allow the one not to give the answer because I think she's supposed to know it. I give an examination, and the other one makes more than she does on the test. I'm upset now. How did she do that? Whom did she copy? Whom was she sitting next to? Then I finally remember, she was sitting next to my desk and she saw my answer key. I won't allow her to be equal.

How many of you have young children, a boy and a girl? Anyone? Who's the better child? When they grow up, sometimes the girl is the favorite of all the grandparents. She has all kinds of nice clothing. The boy comes along and he's a demon. The father has to take off work to go to school to check on him. Now both are out playing in the mud. They're both just as muddy. Watch the mother's behavior.

"Come on in, Angela. Go in the house and clean yourself up. Go get your nice, little dress that grandmother sent you and put on your nice shoes because dad'll be home soon. Put on some nice powder. You want to look nice when daddy gets home." Here's the son. "Come on in this house, boy! Get those dirty clothes off! Just look at you! I told you about doing that last week. Now you're right out there again. I don't know what I'm going to do with you." The final word is, "You're just like your father!" The same behavior, the same thing, but it's in the parent's mind that the girl is good and the boy is bad.

We can't have equity with that. There's a Timmy Smith in every school. Nobody wants him, he's just passed along, never accepted but tolerated many times. He, with the others, comes to school; he's wet. His clothing is not like the others'. Everybody's in line coming in, and the teacher is standing at the door patting one boy on his head. "Take off your wet things. Hang them up so you won't catch cold." "Good morning." Poor Timmy gets there. Other days he's been working on the bulletin board because teacher doesn't want him. Teacher goes to check his cumulative and health record. Maybe he didn't have his childhood

diseases; he'll have them all this year, mumps, chicken pox, measles. Maybe he'll have everything. To the teacher's surprise, he had them all during the summer. He comes everyday, wet, cold but doesn't catch pneumonia. The teach sees him as she chooses to because she really doesn't want him. Timmy's tolerated because he was assigned to the teacher.

Equity and tolerating students don't come together. We can't do it. We have to accept students for what they are and who they are first and for what they bring to us. They bring us their best. They didn't have a choice of choosing their parents. They didn't have a choice. We are the professionals. If we are truly professionals, we can take whatever comes to us and do something with it if our attitudes are right. So in the outset, a whole lot of this is attitude, and it's difficult not to have that. We've heard teachers say, "Oh, that little Janie Smith, she's such a nice kid. I'd just like to have her for my own." Why don't we want Timmy Smith? We don't want him, but we want the other child. She's so nice. That's one of the big fallacies.

Let me share with you, then, some things that I think we need to have institutionally, in classrooms, and with individual students. If you look at the first page, I've written a target there. In order to have excellence and equity, I think we need to set up some type of target goal.

First, I think we need an effective instructional program. That's what education is about. We sell education; we sell instruction to our clients. We should be the best people there are in doing that. We should practice education as lawyers practice law and as doctors practice medicine, but we have other people telling us what to do many times. We listen to a lot of things that people say, and we do some negative things ourselves. "You know, next year you're going to get that Tom Brown. He is the worst kid I've ever seen. I feel sorry for you. You're going to get him next year." In the teacher's lounge not much positive things are going on. We

have four phases and ten steps in this.

Step one, develop a clear statement of philosophy, present to board of education for adoption and dissemination to staff, students, and community. Do you know the philosophy of your school? Have you ever seen the student philosophy, any parts of it, in the program at baccalaureate or commencement exercises? Is it in the yearbook? Is it posted anywhere in a hallway in a frame or someplace in the school? Is it discussed with your students and teachers? Should it be the foundation of your program? Should it be what you believe? Most times it's sent in with the Christmas report and filed away again. How much does your board of education know about it? Do they endorse it? I think we ought to know ourselves. There ought to be some mission statements written. This is what we're about, and this is where we plan to go. When a person is interviewed for a job, he or she should be told, this is our mission. Here are our goals; here's what we plan to do.

I work in Halifax County, a rural county. In terms of the economic status, we're low on the list. Out of 143 school districts in the state of North Carolina, we rank 141 on achievement. It's because of the attitudes. Last month, the first time we had a writing test-- we're giving writing tests again, sixth and ninth graders--we had eleven students in one school to score a perfect score, 4.0. I got a call from the state department of education. They wanted to know if there had been any teacher interferences or over-teaching. It didn't look right to have that many students from one school to score that high.

You see what the perceptions are? When we're at the bottom of the list, we can't do well. If we had been Durham or Raleigh, that would've been great. Now there had to be something wrong. The integrity of our teachers being questioned I will not allow. I'm writing a nice letter in reply. I've thoroughly investigated. The integrity of our teachers is not at stake, but the teachers have enhanced their credibility with me. They did a good job of over-teaching, if that's what we want

to call it. I call it skill maintenance. I told teachers to do a better job next year. I have to write and tell the department that.

You see, when a group's down, everybody thinks that they can't come up. The group has to stay there because others have their perception about the group . I'm going to tell the state office also there's more room at the top and we plan to have our rank in a single digit in two years. Give us the time. We're going to be there because we have some of the best students I've seen in a long time in terms of behavior and respect. The students want to learn. They're enthusiastic.

It's been a long time since I've gone into a middle school or a high school to hear "Yes, sir" and "No, sir." I'm accustomed to "yeah," "hey man," "dude." "Yes sir, no sir" are very respectful allowing maximum instructional time. Teachers don't have to tell the students to sit down, don't do this, and don't do that. It's just strange to me, but there're some attitudinal changes that we are going to do. I've worked with principals all this year trying to get their minds right. The next year will be with teachers. My working with them will be through clinical supervision and observation participation. I'll go into classrooms; I'll take notes. Just let me help. Let me work; let me model behaviors that I'm seeking. Let me have the class for a while.

I was in a class this year for students repeating eighth grade for the second time. I asked a young man in the back of the room what is a fraction. I didn't want him to give me a definition that somebody else had written. What does he think it is? And he told me, it's a part of a whole. I said great, and I asked him why he was sitting way in the back of the room with all of that knowledge. It told me that he was selfish and didn't want to share with his classmates. He should come up front so he could say some other things. I brought him down front. He probably hadn't been to the front of the classroom in the last five years. Then I asked him some

other things I thought he'd know. I told him I should let him teach the class. He knew all those things. He got fired up then. We went through the whole thing. On his way out he told his principal that it was the best day he'd had in a long time.

I brought some equity to him by recognizing him first and telling him that he didn't need to be back there, all laid back as if he didn't want to be in the class. He had a brain and had to do something to it. We had three or four youngsters after that session test out of Chapter I because they wanted fractions, and I showed them how to do fractions in forty-five minutes. I can't hold more than two sessions on fractions. I'd run out of things to teach. I wouldn't know anything else to do. I really wouldn't. I can't teach fractions for six months. I wouldn't know what to do.

I go through this with students. I ask them first what they'd call a fraction. I ask them, what do these things mean, not just numerator, denominator. This tells the number of equal parts of one whole. This tells the number of those parts that I have and that I'm concerned with. I have three of the four things. Then I say, if you can add whole numbers, subtract, you can do fractions. I talk about fractions that are alike, unlike, proper, improper, and that kind of thing. Then we start working on them.

I'm saying, remember this? Least common denominators. Well, why least common denominator if we have to reduce to the lowest term? Why? And many children stop here. They work on this for half a class period for two weeks. Once they finally get this--and don't put twenty-four over here or you're in trouble with the teacher--when we get this we have to run across here with this three into twelve goes four times. Many times they write the four, but look at all of this stuff. We have to go over here, go back over here, and come back over here with this. Right? Finally, we end up with this. Then four into twelve goes three times, and we come up with our answer. Then we have to add them. It gets worse when the children get to subtraction, when they get mixed numbers and

have to change a whole number to a fraction and they forget to add that numerator to the whole number.

And here's what I say. Let's don't do this. Let's do it this way. You see, I believe in teaching basic properties of mathematics. I teach the multiplicative identity. The number times one is that number, and I'll say there're many ways of writing one. I can write one as nine minus eight. Right? I can write one as two over two. Since I'm dealing with fractions, let's multiply both fractions by one. This is fraction number one; this is fraction number two. I want to multiply fraction number one times one. I'm going to use the denominator of fraction number two to write one. Is that O. K? So if I'm using that, I would have this. All right? Then I'm going to multiply fraction number two times one, using the denominator of fraction one to write one. Now I'm going to utilize what we've spent all the time memorizing, basic facts and multiplication. I'm going to multiply across the top, three times three, four times three, plus two times four. I'm going to treat this this way, take out one whole, and I have that. Twelve, twelve plus five, twelve, is what I get out of that, and then we come back to this, but I teach this until I realize that they know how to use it now.

(Question from audience)

I think where we have the inequities are mostly with low achievers. There are some inequities in the other groups, but most are with low achievers. When I work with students, I work with the lowest we can find in the school. I'm going to tell you this morning what I say. Whatever you are, I'll come back to where you are just to see the lowest. Give me the student whom everyone's given up on, and I'll ask you one question. Have you ever heard the student singing or whistling a tune? If you've heard that, we're in business. That student can learn mathematics, science, whatever you want to teach.

Have you ever realized that learning a tune, to sing or whistle is done

auditorily? Right? Youngsters can hear those songs on the radio twice and know every word. How do they do that? It shows that they have a brain. In fact, I don't even know what's going on. You're telling me that I can't take the other modalities that we have, auditory, visual, and kinetic and I can't teach mathematics? I don't believe it! Now, I may have a ten year old I have to go back and get rocks for counting, but I think that's one of our problems.

We have in our minds that his age and the room number over the door, grade five, indicate where the student should be functioning. That's not equity. We make that beautiful phrase: we take the children where they are. I say where are they? We mean we take them in the classroom. We're not talking about the achievement level when we say we take them where they are. How do we know where they are? We don't have enough minutes sometimes to express that. Suppose that this were subtraction. Let me show you. We just subtract nine minus eight. Suppose this were division, we divide nine by eight. Now that's where the problem comes because in mathematics we've done so many things without knowing why we do them. We memorize rules well. What's the procedure here? What do we do? What do we do, invert or get the reciprocal? Listen to all that nice terminology. Why do we do that? Why do we invert? Looks good doesn't it?

This is why I'm coming back to understanding what's going on. If I have six divided by two-thirds in my basic property of mathematics, I know that, if I divide a number by one, I get that number. I have six things. I put one in a group; so I get six groups of one. If I have six things and I put two-thirds in a group, I get more than six groups, don't I? If I have six apples and I'm putting two-thirds in lunch pail, I can put some apples in more than six lunch pails, can't I? Now, if that's logical, it seems that the denominator to me now is so important when I do this on the abacas. I've worked it out concretely now, that we do all these operations on the abacas to show what's going on. The denominator helps me to set up my array

when I do it on the abacas because it deals with the wholeness. This thing says that there are three equal parts in one whole. They're thirds. I have six whole apples; so, in order for me to know how many thirds I'm going to have, I have to multiply the number of parts in one whole times the number of whole things. Is that right? I have to take six apples and cut them up into thirds. Since we multiplied this way, straight across, I have to put the three up here now. I have to multiply the number of wholes times the number of parts in one whole to find out how many thirds I have. I get eighteen.

Now as a teacher I think you should be able to illustrate. You can draw two number lines now in twelfths. You see, I always work out fractions with a common denominator with addition, subtraction, and division. When I change those to twelfths, I have nine-twelfths and eight-twelfths, three-fourths and two-thirds. Right? I have nine-twelfths of a rope. I want to give each kindergartener eight-twelfths. Well, the twelves are not important anymore. That just says that I have similar units of measure. I know that I have nine of those units, and I want to give a student eight of those units. That makes one whole rope that I need for jumping. So if I have nine units and I'm giving out eight, I can give one whole rope and have one of another eighth unit because only eight of them make up the length of the rope I want. So I get one and one-eighth. Students do it.

Then we have to teach for testing. We're in a testing society. I tell my students to understand that and to let me get them ready for the test. I want them just to smile when they get to fractions. Let me show you something. If you have three-fourths minus two-thirds, don't go through all that stuff I did. Multiply your denominators. That gives you a common denominator. Cross-multiply this denominator times this numerator and cross-multiply this one and add the two together. It's all you're doing. When you come to division, that's easiest. First of all you know that if you divide three-fourths by something less than one, your

answer's going to be greater than three-fourths. You know that before you start, but here's all you have to do. You don't worry about the denominators. You see, when you look down the list, the students got the answers.

When I took my preliminary examination for the doctorate, we had forty-eight minutes on mathematics. I did them in twelve. Most of them I didn't have to work out. When I looked on that three-fourths divided by two-thirds, I knew the answer was greater than three-fourths. There was only one answer greater than three-fourths. I just checked that one off. We call that test-wiseness.

We're building equity, then, into the competitive things for norms and tests. We go through this whole way of writing stuff down this way and going through all this. We've got to change that. Many of our students could have worked more of the problems, but the time ran out. Yes. We have to do both. We have to go back. I do that. I teach the process, and I go through and diagnose every wrong answer in mathematics to find out what's wrong. Most times we have students doing the wrong things. After I've done that and worked with them, I say, now we've got to get ourselves prepared here. We understand what we're doing . Now let's get ready for these test things. Let me show you this. After they understand all that, if I give them a test myself, I don't care if they can do it because I've picked up the things they processed because I graded the total test. I don't give twenty-five problems to check out adding two digits and two digits, regrouping from tens to hundreds. I give only five problems. Then I have time to go through and analyze the concept clusters to know where the difficuty came. I check answers, and I decide that the answer's wrong because of computational skills. Sometimes answers are wrong because of regrouping, place value, and other things, not just computational skills. We have to check all of that.

So we have our students, and we're giving toothache medicine when something's wrong with the foot. That's what we're doing. We're telling the

parents their children aren't learning. We have the psychologist test the youngster. We're doing all these things.

I was made to believe in college that I would never do anything in mathematics. I had three C's in my freshman year and never took any more mathematics. It wasn't until I became an assistant principal, some nine years later, that I found out what was the mystery in mathematics. Mathematics is the language. It uses symbols to give quantitative ideas. There are five basic groups of symbols. There are number symbols, zero through nine; there are operation symbols, addition, subtraction, multiplication, division; there are relation symbols, equal to, less than, greater than, is not equal to, and so on; place-holder symbols, x, y, square, triangle; and there are grouping symbols, parentheses, phrases, and fractions. We use those to express our quantitative ideas, but who teaches mathematics symbols? We do in language. We teach letters of the alphabet and do all of that. Why don't we do it in mathematics? If I write this, it doesn't mean anything. It's great to talk about things that no one else knows, but mathematics is simple. I found out that special education youngsters can do algebraic equations. I've made up a chart for them. No problem. I just give them this kind of stuff: X over 4 - 3 =, let's say 37 +. "Please don't put any letters of the alphabet into mathematics. Oh, my god, you're doing algebra now!" We first look at the symbol of operation to see what this is. That is subtraction, and it tells me in subtraction there are three parts to any subtraction equation. There is a sum, that we might have called minuend; there's an addend, which we might have called subtrahend; and there's another addend, which we might have called the difference.

You know, it's amazing in mathematics. How do we check our results? We tell youngsters the two things that we add together are called addends. How do we check ? Add the difference to the subtrahend to get the minuend? All of that stuff winds up out the window when we start checking. What does minuend mean?

Subtrahend has a mathematical relationship in difference. Minuend could have been called a foxtrot, a waltz. It doesn't have anything to do with mathematics. We just picked it up. So I don't use it. If I know this is a subtraction problem, I label the parts sum, addend, addend. The missing thing, the value I don't know, is the sum. How do we find a missing sum? What do we do? Add. Then we won't have to worry about transposing and changing sides and doing all that. This tells us what to do. So then, X over 4 must be equal to 37 + 3. Right? Then X over 4 has to be equal to 40. Now what does this say?

I never knew this until I had a master's degree. I never knew that, when we write things that are ratios, we are really dividing. I really meant, X divided by 4. When I had problems like this in my freshman year in college, I passed them up. I said that's meant for the geniuses; I don't know. That's crazy! Here's what the problem says. It says X divided by 4 = 40. My problem is division. This is a product which goes in what we call the dividend. This is one factor and this is the other factor. The product is missing; so in order to find a missing product we multiply. Now what child have we had that can't add 37 + 3 and multiply 4 x 40? It's in the analysis of all this that we made all the difficulty.

The reason that I developed that method was, in working with some students to get their GED's, after quitting school at third grade and becoming adults, I had to find the way to take advantage of what they knew. I found out that they knew enough; it was just the complicated way we go through teaching it. So I made them a chart that said the problem. Then I wrote across there, the operation and put addition. I said component parts: two addends and a sum. Missing component: addend. Operation to find missing component: subtraction. Equation: and they write it out. No problem.

I'm proud of myself because I almost flunked out of mathematics. I knew I didn't know anything in mathematics. I've done hundreds of mathematics workshops now, and people say I must have a doctorate in mathematics. I say

dream on.

Here's another thing. Let me show you where anxieties come in. Subtraction. I'm pointing out some of the things that I find with students as I travel around now. Here's what the child is doing, and nobody's taking the time to learn what his difficulty is. Here's what's happening. He regroups. There's a zero there; so he regroups from hundreds to ones. He comes back and regroups from hundreds to tens. Nothing's wrong with the subtraction facts. The problem is with the regrouping, and the teacher never knows it by checking the answer. What I do to eliminate this is what I call half-stepping.

I think we take too many whole steps in mathematics. Our steps are so much larger than the steps that the child takes; so I cut them down and say let's take half steps and be together. That's all I want. I don't ask for anything else. If this step is wrong, the answer's going to be wrong; but we're checking only the answer. When I come to the student, this is what I check, the step. That's what I'm checking, each step, and making sure. Then the next day or so, whenever we work, we do the whole process.

What we're saying is that we've been putting all the things together at one time. What we need to do is to break the process down into little parts, but we have to know what the parts are. We do this in reading more than in mathematics and science.

In science, we don't do much with observation. Students really don't look. I'll suggest something for you to try. Take some leaves to class, or tell your students to bring some leaves. Have your students pass the leaves up to you. When you get all the leaves, ask the students to draw a picture of the leaf that each brought. You'll have youngsters who've brought round leaves draw skinny leaves. Students are not accustomed to looking at things because we've geared them for production, forgetting the answer. Don't add a lot of analysis and observation; just get the

answer. So we've lost process.

Let me mention one other point. The equity we seek in school has to be correlated with the equity in the society for our students. We're doing some things where our students are not having equity. Let me mention jobs and applications. We minimize acceptance of things for which we should have standards. We don't see notebooks anymore or folders for papers. Homework comes out of the hip pocket or purse, half-written, scribbled. We don't have margins correct in any way. If we turned in an application that way to General Motors, they might take it; but, while we're there, they'd throw it away. If the society accepts things folded up, let's keep doing it; but, if they don't, why do we do it?

Your neatest students and the most reliable are kindergarteners and first graders. Look at their letter formations. Send something to the parents, give it to one of them; it'll get there. Well, why not our older students? Is it that we don't expect it? Shouldn't students have notebooks? Shouldn't we teach them to be neat with papers? In North Carolina we're beginning to test writing because it's so poor. Why do we accept it? We went through a period of time when we had student unrest. Everybody was telling us what to do and what we were not going to do, and we accepted it. We've got to come back and practice education and do the things we think we're supposed to do.

(Question)

We had some teachers in the late '60's and '70's who wanted to do that (maintain high standards). Because of the riots and unrest, some principals said to teachers that they were too stringent, too rigid. I know some who backed away. I was like you. Students didn't come to me when I taught fifth and seventh grades without homework, and no parent told me when to give it. Students and parents would ask why I gave homework on Friday. My answer was that we were at the point on Friday where I needed to extend the school day, plus the fact the students

had more time. They had two days. I was challenged for giving some homework before the Thanksgiving holiday. I told them to go on their trip but to pack their books first.

What I'm saying is, if we're going to have equity and excellence, come back and say in the classroom, this is what I expect. We've had court cases. Remember the teacher in Detroit? Some graduates had term papers to turn in. The teacher had a deadline. A student came in two days later. The teacher wouldn't accept the paper. The student went to court. We didn't go to court in former days. I've been in court. I went for expelling five seniors ten days before commencement. The judge sent them back three times, and I expelled them three times. I told them I would go to jail for contempt of court first.

We have to do some things which we think are right. We need to stand up because our system has decayed, and we're being accused. Why should a parent tell us no homework on Friday? Homework to me is an extension of a school day; and, whenever it's necessary, that's when I give it.

I had a teacher once tell me that I had given her daughter homework over the weekend and she and her husband had to get a babysitter to go to the movie. I said that was her problem, that she couldn't tell me when to give homework in my class. I'd be responsible for what I had to teach, but I wouldn't have her tell me when to give assignments. Her daughter was a perfectionist. She'd do a paper over five times to make it right. So she was up until Sunday night getting that particular paper right. The mother and her husband wanted to go to a movie and had to get a babysitter. I said fine. I didn't have to pay for it. I was not worried about it. The child's paper would be right, though, before she passed it to me. That's what we're looking for, but we give way to all these other things. I'm saying to you, don't give way.

If we're seeking equity and excellence, there must be some guidelines. There

must be some expectations that we hold to, regardless of who else disagrees. I don't go to a dentist and tell him what to give me to pull my teeth. He practices dentistry. I want us to practice education. We're the only people who are certificated to do it, and we should know more about it than anyone else.

(Question from audience)

Everybody went to school. I have had to say, no. I had some parents upset with me about field trips because I wouldn't approve of a principal taking a school to see the waves and the ocean. I thought of the liability for seven hours of those students on a bus to see the waves. I told them to get a fish, place it in a tub, take a stick, and make some waves.

We have to begin to look at the value of what we're talking about and not what someone suggests. We've had some field trips that have had educational value. They were objective; they had follow-up activites, but we didn't go because it was fashionable. Someone said that it was tradition. I said that I didn't even know what that meant. I'm talking about what's new, what we're going to do now. We're number 141 in achievement out of 143 school districts. Do you want to go away and take a day just to look at the waves? No way.

I want to hurry through these. Look at number seven: build a professional development program. That's what we need. We came out of school, many of us, but we don't have the skills coming from our degrees that we need for teaching. Go back and examine your training. Who ever talked about diagnostic prescriptive techniques and the things I'm showing you this morning? I don't remember that. I got an A in my methods course in elementary school mathematics; but, when I went to teach mathematics, my methods course didn't work with my students. We have to build a professional development program; it's a continual process. It's like the expansive interstate highway system in this country. It should always be under construction. Curriculum and staff development are never finished.

Look now at computers. I've got to go back to school. I've missed, since I was in kindergarten, maybe about five years in my life not being in school. By the time I thought I was going to take a break, I've got to go back now and get in with those computers because I'm in charge of personnel. I've got to learn how to put all those things on certification on computers. I'm working with teachers in mathematics. I've got to know how to do those things on a computer. I'm not complaining about it; I am not to the point where I feel that I'm burned out. That's another thing. Some people ought to be burned-out by now.

Teachers get tired of working so hard. It's like working backwards because we're working on the wrong thing. We're not getting what we're seeking, and then we're accused of not doing anything. I've seen many frustrated teachers work all day in a class trying to teach fractions, but the children don't learn. The teachers are standing in there burned out because they're not getting what they want, and nobody's helping them. You see, we stand off at a distance in the ivory tower and tell you what Piaget said instead of bringing it into the classroom to you. Check this out. It's O. K. if we can talk about it, but how do we make it practical and how does it fit with what we're doing. When we get consultants into our district who talk about Rosenthal and Kholberg, I ask how do they make Rosenthal functional in Halifax County. If they can't, then don't bring him here. Get him out of the ashes of the grave and bring him alive into how we can use him here. That's what we need to do. Instead, we sit through some person's long explanation and dissertation on something he likes, and teachers leave shaking their heads. It's unfair. We can't get anything out of that.

Develop an accountability in the instructional program. You need to set some goals, identify some specific objectives, assess your student needs, and construct or select some criteria-reference type tests to measure skills against students achievement rather than measuring them against norms. You don't have

to write all of these objectives. We have enough objectives written to fill this room. Just choose the ones that fit what you're doing. All of us or some of us saw Robert Maeger's book Instructional Objectives way back and learned how to write objectives. Now with many of them it's just as easy to choose some that you need and go on.

Analyze your delivery system. This is a big part. How do you get the message from the sender to the receiver? I think we're trying to get the message there. It starts off over here with the sender. Here's the receiver. But we've got all this stuff in the middle I call noise, things that interfere. When the message leaves the pipeline over here, it looks this way. As it goes through the pipeline, by the time it gets over here, it's like this. The pipeline is almost closed up. How do you open that up? When you open the pipeline, you're also building in equity because it may take more to open the pipeline for one student than it does for another.

I have to know why they are or are not receiving these messages. "I've explained the lesson." You see, you can't just give out the lesson, the message, and say, well I gave it in class. How many of you in graduate programs, after the instructor gave a lesson, never carried it from the room with you because you didn't know what was going on?

Implement or personalize instructional programs. That's different from individualize. Personalize is for that one person, understanding his affective needs as well as cognitive needs. Some youngsters, particularly those who have disabilities or are not learning with a fast rate, many times find that their parents will even treat them as they treat other children in the family. It's only been recently--it hasn't been fifty years--since we have had the Association for Children with Learning Disabilities. Some parent will find it brave enough now to say, my son or daughter has a learning problem.

At first parents were trying to hide these youngsters. Even now we don't

hear a father in the barber shop talking about his child in special education learning to build a boat. All we hear is how his son is taking algebra and chemistry and making straight A's. That's what we hear.

So it's a matter of children being touched. It's called kinesis . We're getting all these terms, about how we touch people and how we watch them.

Who's in Chapter One in here? Title One? Did they change the name? Chapter One? Right. Did you ever notice with these youngsters, when you're working with them, when they come up to you, they want to get right up against you? Do you know why? Because nobody touches them. Nobody puts arms around their shoulders and says, you've done a good job. Those children haven't done anything teachers think to merit that. Watch teachers' behavior. That needs to be given attention. Children need touching, especially little ones. They want to get up right close to you. Some of the other youngsters do well, and they're always given awards at home.

We had a teacher who was in Ebony as one of America's ten best dressed women. I told her she should be working as a model and with Ebony full time. I did! A parent would have to ask himself would he want his child in that teacher's room. The children couldn't come close to her. She had to be immaculate at all times, fifty wigs and all of these different things. She didn't touch the chalk. She had a chalkholder to write on the board. She was in the wrong place. The principal gave her all of the students who were better in achievement because she did the principal's records. That's ridiculous. I happened to be a supervisor in the building, and I just told her that she was in the wrong place if a youngster couldn't come up and touch her. I asked, suppose a child falls and gets hurt, what are you going to do, take a stick and try to pick him up. What is your problem? She got upset with me, but I didn't care.

You see, this thing of teaching is more, then, when we talk about equity. It's not just the cognitive domain. It's affective domain, and affective domain is left

out so often. Look on the next page. There are some things in the cognitive domain that we need to address. It's not just mathematics and science because they're interrelated. You have to look at all of this.

Scientists now must be able to write to express what's going on. There they are, the psychomotor domain to be included and the affective domain. Then step nine, coordinating the instructional programs at all grade levels, K through 12. This is the thing that's done so poorly. We can take K through 5 at the same school, and different teachers are doing different things. Our speaker yesterday talked about the kinds of curriculums, the latent curriculum where teachers go in the class and do what they want to. I worked in Dotham, Alabama, last year and found four different terminologies in subtraction from grades K through 12. Well, why should it be that way? Why shouldn't it be sum, addend, and addend in kindergarten and the same thing in grade 12?

Look down at step ten, evaluate the program. We need to start checking on the attitudes about things. We just take some type of cognitive measure, but what do people feel about what is being done? The board of education in particular needs attitude checking because they make the policies. We're the only professionals who have lay people who supply policymakers.

All the other professionals have professionals doing the policy, but the schools belong to the people; so we're caught with that. That's why superintendents last only two and one-half years. I've been there eight months. I don't know how much longer I'll be there because I told off a board member the other day. A parent had gone to the principal for some little fifth grade boy doing something to his daughter, pinching her or squeezing her or something. The mother was upset. She called a board member. He was going to go with the mother to the conference with the principal, which is out of line. When the board member got there, the principal said he would not hold a conference with the mother with the

board member there. The principal said he could straigten this out with the mother, but the board member told him that he was his boss. The principal said that he was not. That upset the board member. So then the board member said he was going to file an insubordination charge against the principal. I said, why don't you do it. I said, we don't understand your role. There's a perception of your role, and there's a legal role for you. Your legal role is that you are a board member when the board is called to session and minutes are being taken and your authority is one vote. When the board meeting adjourns, you lose that and you become Joe Blow citizen again. Now the perception is, by you and the others, that you still have authority. I said, go on and file your suit. You didn't have any authority over that principal. You shouldn't have been there. He's never filed the suit.

I can remember the time that I probably wouldn't have said that, but after thirty years I'm impatient. I'm tired of all of it. If the board had told me that night they were voting to revoke my contract, I would have done as the man did in Iowa. He called the board members together because they were always on his back. He brought in a big cassette recorder and asked them to listen. He said that he had the solution to the problem. When they turned the recorder on, he had recorded "Take This Job and Stuff It." He had his bags already packed.

The goal then, it seems to me, for equity and excellence, if we're going to reach that, is to provide each child the opportunity to participate in an instructional program that will help him or her to grow and gain self-confidence. Growth to me is not only academic growth but social growth. It's all of the affective things and to gain confidence. There are so many youngsters who are afraid. There are classrooms full of fears and anxieties. A student can't be wrong. School is the only place I know where one has to be right the first time or there are consequences. Why is that? Don't wrong answers help us to assess student needs? They should, but I sometimes feel that we are not sure of

ourselves. It gives us support to know that we can tell someone else when he's wrong. I guess there was a time when I was a teacher, in mathematics especially, when I was afraid. If I left my teacher's manual, I was sick. I didn't know the answers. That's a bad way to teach, with insecurity. You know, we're dangerous because people can't ask us questions; they might get into an area where we're not so sure. Some college professors are that way. That's why they lecture all the time. The student can't ask any questions because the student may ask something the professor doesn't know.

The next part has to do with necessary steps that we follow in analyzing instructional programs. There are four basic areas. I outlined them; so I won't go through them. They are context evaluation, input evaluation, process evaluation, and product evaluation.

I want to spend some time on the last three pages because I think they're important. At the top of that page should be Equity and Excellence, Equity and Excellence Planning Board. I think this is where we get to the crux of the matter.

The first one has to do with making a classroom environment understandable. These are in diads, and I'll go across. First of all there should be concept illustrations. The concepts we want to teach we ought to illustrate. We shouldn't start out with the abstract. We use the abstracts after we have conceptualized. I know what I'm talking about; now I'm going to tell you by using mathematical symbols. I can express myself, but so often utilization precedes conceptualization. We're trying to get students to use what they don't even understand, in mathematics, in particular.

Going across, identification of given component parts in a mathematical statement, always. Don't work anything! I have students put down pencils; I have days we have no pencil mathematics. We just look at the problem and talk about it. What is the operation in this problem? What are the component parts? What's

missing? What is the equation for solving it? What are the key words in this reading problem? Ann has twenty-five cents; her brother Tommy has five. How much more does Ann have than Tommy? The word "more," what does it suggest? What operation in mathematics? We talk about all of this. Now when I come to write the problem, I know how to write it if I understand. I know what I want to say. I choose the appropriate sentence. Look at your test scores and see if your students don't do poorly where it takes that kind of analysis. If you stood over them and told them what to do, they could do the computations. You have to teach them.

Identification, conceptualization, and utilization of basic communication symbols. I think I told you there are five basic groups. Teach symbols in mathematics. Which of these is correct? Which is correct? The second one? Either one? You mean, you could give a test like that to students and get either one of them right? When we have some things that are confusing in the society or confusing in the school, what do we normally do in order to correct it? We set up a rule, don't we? What's the rule for this? Multiplication and division precede addition and subtraction. That makes the first one right. Right? Couldn't we make the second one right? Could we? What do we have to do to it? What do we call that in mathematics? What would you call it in English? What do we call it when we put in those quotation marks? We call it punctuating, don't we? We have to punctuate in mathematics, too. We have to let the person know what we want him to do. We only want you to add 2 + 12, and here we want you to multiply 5 times 4.

You see, we don't express things in mathematics the way we should in the statements we say. I think a lot needs to be done with symbols. How can we say this mathematically? Especially when we get into set theory, we're talking about set A is the subset of B and all of that stuff. We just need to teach the symbols.

Let me recommend a book to you that's one of the best that I know of. It's called, Today's Mathematics. It's a paperback, but it's written for teachers. Today's Mathematics by James Heddeens, published by SRA. He has another edition out now that has a lot of things on computers in it. We have purchased that book, and we're making it a notebook. We're taking the book and tearing it out of the paperback, puching in holes, and putting it into a large notebook. All of our Title One, Chapter One teachers will have that. I'm doing a workshop with them next week on it. The book gives examples; it gives definitions, illustrations. You need that to be secure. The book gives examples at different grade levels. If Heddeen's talking about addition, he gives examples. The book goes K through six, but don't worry about that. If your students can do what the author has in that book for grade six, they will be going through statistics and probability. I think it's one of the best helps that I know for teachers.

Now, you see then, if we get into the symbols, we understand all of this; then it's easier. Now, don't rush through this. We try to teach too much. We teach a little bit of a lot of things. We need to teach a lot of a little bit.

Turn to the next page. This plan is for a meaningful classroom environment. To me, a meaningful classroom environment for students is without fears and anxieties. A student doesn't have to worry about making a wrong answer. He knows he's not going to be embarrassed. Sometimes we learn from wrong answers; but, by the time children get into sixth grade, seventh, and eighth, it's hard to pull anything out of them because they know the results. Kindergarteners will say anything. They haven't learned yet.

Immediate teacher support and feedback relative to task performed. When students do things, give them some feedback. Don't wait two or three days with all of those papers stacked up. You don't need to give twenty-five problems to check out a basic concept. You can give three or four. Check out the whole process and

let students know. Why did you do that?

Teacher patience. Equity is related to patience. He doesn't get concepts as fast as she does. I need to have more patience with him. I owe it to him because what I'm trying to teach him I consider to be valuable for both of them. So I can't leave him because she has conceptualized this.

Process oriented rather than answer oriented. We need to check that. We need to teach children to take tests. I mean it. I tell them, this is what you're going to have to do.

Teach acceptance of all regardless of achievement. Remember not tolerate but accept. When you accept the child, the individual comes before the behavior. When you tolerate the child, the behavior comes before the individual. When the child acts up, you get rid of him to get rid of the behavior before you deal with the individual. That's why the principal's office is full sometimes.

Teacher diagnosis and prescription on the individual basis. We need a lot of training on that to know what to do.

The last page deals with components of the relevant classroom. You see, what we teach sometimes is out of tune with the society. The tasks that we give students facilitate the utilization of the acquired and conceptualized skill. Then it's relevant. Don't give students something to do that you know they've not acquired or conceptualized the skills to do. Then it's not relevant.

Task and matching the student's skill level. If you know that a student is functioning at a skill level that's below whatever you're teaching, if you're teaching ninth grade and that's not his skill level, don't give him those things out of a ninth grade book. Don't say you don't have anything else to do. Then that promotes dropouts and suspensions.

Tasks that have a spiral sequence. Tasks are arranged in a least to most difficult sequence, correlated with many real life situations. The classroom

shouldn't be isolated from the society, whenever you're teaching. I like mathematics because I can do a lot of things with extensions of addition and all that by teaching real life situations even with LD students. At summer camp students had to prepare for the last meal. They prepared the menu. They made up a list of the items, the units, whether they were in pounds or by the dozen, and then the price per unit, how many units, and then added all the stuff up. The older students, then, had to work out the money for a grocery list like that. Then they had to work with the percent; they had to tell me what percent of the grocery list was dairy products, meats, and bread.

When you're teaching, even shopping lists ought to be related to the students. When you're a teacher, you've got to teach all kinds of students even a fifteen year old student whose reading level's at grade three. Don't give him some characterizations of six and seven year olds. Choose those things, at least, to give him that much respect.

ACADEMIC ACHIEVEMENT IN A DESEGREGATED SETTING

The Nassau School Experience

Dr. Roosevelt R. Weaver

During the last several years there has been a great deal of discussion about what is wrong with our educational system. New kinds of problems have arisen as our demographics changed. This is a crucial period for educators to examine the literature and the research to determine the keys to a successful school. The information that I have come across, as well as my personal observations and experiences, has given me insight into the role I can play as principal of Nassau School and as a member of the administrative team in our school district as we strive to become more effective in educating our youth.

One of the critical issues of education today is the cultural diversity in our schools. As I travel around the country, I observe that our schools have become small social structures comprised of many cultures and diverse groups; therefore, in order for us to become more effective educators, we must gain a better understanding of students from a sociological perspective. By this I mean that an understanding of mores and folkways will be helpful in the education of our students. There are many educators who have never taken courses or workshops in Black history or Hispanic history; yet a large proportion of students come from these backgrounds. The administrator who is knowledgeable will be more comfortable in directing staff to deal with cultural differences and diversities.

Educational leaders on the local and national levels fail to include the issue of the plural society in their reports which have impact on curriculum development. As adjunct professor of sociology, I am dismayed to note that young, non-Black Americans have limited knowledge of the Third World population. They lack perspective and insight into the cultures of their fellow students.

As the world becomes smaller because of rapid transportation and advanced communication technology, all contributing citizens must be able to relate to many different cultures. Also, those who are members of a subculture must be exposed to broad experiences and people from outside their community who will expand their base of knowledge. It is discouraging to note that very few students or adult Americans have the ability to communicate in another language. In the future, if these problems are not addressed, our youth will be ignorant of world affairs and handicapped in both the national and international job markets. What can we do to correct these serious concerns?

At Nassau School we have begun to see some positive results from our efforts to solve our problems. I would like to share our experiences with you.

We believe that a successful school is one in which each child achieves academically according to his or her abilities, regardless of cultural and socio-economic background. That is, when one traces the academic growth of randomly selected students, the students cannot be identified as having come from any specific socio-economic strata.

After an exhaustive study of urban schools in the state of Michigan, Dr. Ronald Edmonds (Educational Leadership, December, 1982) identified the following characteristics common to an effective school:

1. The principal's leadership and attention is to the quality of instruction;
2. There is a pervasive and broadly understood instructional focus;
3. There is an orderly, safe climate conducive to teaching and learning;
4. There are teacher behaviors that convey the expectation that all students are to obtain at least minimum mastery; and
5. Measures of pupil achievement are used as the basis for program evaluation.

We at Nassau School have adopted these characteristics as school-wide goals, with the inclusion of an additional one, raising the self-esteem of each student.

Developing students' self-respect and respect for others and their property has resulted in our school having the lowest rate of vandalism in East Orange. There is no graffiti inside or outside the building. Bulletin boards, media center and science displays, as well as Christmas tree decorations, remain undisturbed. There are very few fights during the school day or after school. What has created this positive school climate? How did we get there?

First, the raising of students' self-esteem is an expressed, school-wide goal toward which all staff members are constantly striving.

Values clarification is an integral part of the curriculum. Every classroom teacher's plan book reflects time alloted each week to guiding students in becoming responsible citizens with ethical principles and values and in helping them feel good about themselves.

Students are involved in government, and the student council is an active body directly contributing toward the improvement of our school.

A district guidance counselor is available at Nassau School each week. She is able to relate on a one-to-one basis with children who are having self-concept problems, and she invites students to participate in group sessions in which they are able to express feelings. She also presents career awareness programs to classes and maintains a career awareness media center, available to all teachers.

Career awareness is another "subject" which has become part of our curriculum as students are made increasingly aware of the variety of opportunities which will one day be open to them.

We invite to the school successful people--Black and White and from all cultures--who have achieved in their respective fields to speak to the students. These guests serve as role-models for the children, offering students a chance to identify with goal-oriented people and to develop an understanding for their struggles for achievement.

A vital aspect of enhancing the self-esteem of minority students is helping them to feel pride in their heritage. Black history is emphasized throughout the entire school year. All classrooms are responsible for assembly programs which are culturally oriented, particularly those depicting the Black experience. Much of the art, music, and poetry taught the children reflects their cultural background. (During Afro-American History Month, representative art work by Nassau students was shown on Channel 13, our educational channel).

Our school has a class of Haitian students who are participants in the district's bilingual program. These students are increasing their English proficiency in a regular self-contained classroom, but they are also sharing their cultural experiences with the rest of us. At an assembly program these students explained their island's history, climate, and food; they recited poetry and demonstrated dances and songs. Twice each week the Haitian students have been participating in a class exchange in which their teacher teaches French to one of our sixth grade classes.

Additionally, students must feel comfortable outside their own immediate environment. Too often they are isolated at a micro-level of social experiences. They are unable to leave their own area, and unable to adapt to new situations; therefore, cross-cultural level experiences are emphasized. This is done primarily with educational field trips to museums, plays, ballets, and exhibits which expose students to cultural activities outside their community.

A final and most important aspect in developing self-esteem in students is establishing an atmosphere of mutual respect.

We listen to what students say about their feelings. The principal's door is alway open, and students feel free to enter and discuss problems or share good news.

Parents are encouraged to visit classrooms, and teacher conferences are regularly scheduled. This closeness aids in developing trust and understanding as well as mutual respect.

Because teachers are now able to relate better to students, the bond which has grown has helped to improve students' achievement test scores.

Since my arrival at the Nassau School in 1978, there has been a tremendous improvement in pupils' scores on the California Achievement Test. A factor which also contributed directly to this growth is the setting of high academic expectations for all students.

Historically, students in our district received social promotions. On their report cards, students were rewarded with A's and B's if they were "working hard." East Orange then made a conscious decision to set high standards for achievement. In order to earn promotion and good grades, students now must demonstrate mastery of specific grade-level skills and objectives. Changing the attitudes of parents and teachers was a difficult process. This was accomplished after many meetings with each of these groups.

During staff meetings teachers gradually restructured their thinking as they were updated on the research and made aware of the influence of high teacher expectations upon student achievement.

At task-oriented staff development workshops, teachers brainstormed ideas for promoting high expectations for ALL students. In groups, teachers analyzed subject matter and listed grade-level objectives. They then shared strategies on how to achieve these objectives.

One of the beneficial outcomes of these meetings was to break down the isolation which existed among some teachers and to allow them to contribute toward our common goal. The special-subject teachers--those in music, art, and physical education--also cooperated by crossing the boundaries limited by their subjects and instructing students in reading, mathematics, and the sciences.

Once parents became fully informed and understood our purposes they have become increasingly involved both at home and in the classroom instructional process. Many serve as volunteers, supplementing and reinforcing skills taught by the teacher.

In conclusion, we at Nassau believe we've selected the right road toward achievement. Starting with high academic expectations for all students in an environment conducive to teaching and learning, with teacher behaviors which enhance the self-esteem of all students, with an educational program that stresses students' mastery of skills while it broadens their base of knowledge of other cultures, we are moving toward our goals.

LANGUAGE APPROACH TO CULTURAL DIVERSITY

Dr. Mary Applegate

The theme of our conference here has been "Equity and Excellence." It's interesting that in the textbook I use for my language arts in the elementary school, the author proposes that the way to excellence is for teachers to work on lessening the gap that exists between research and classroom practices. Too often each is in isolation from the other. What goes on in research and the investigation world, the classroom teacher is not aware of and doesn't work to incorporate into the instructional strategies utilized within the classroom. Often times researchers aren't senstive to the needs of the classroom teachers and the problems there. So our goal should be to work continually towards lessening that gap so that what we do in the classroom has some kind of merit to it in terms of pedagogical value and the value that we have already demonstrated.

So, one of the things we're going to start today is to take a brief look at two studies that have been recognized as classics in the area of language and see if we can develop some principles for the teaching of language arts, utilizing those studies. We'll try to do this in a way that will not appear to be tedious and boring that we sometimes associate with study.

In the first study that we'll do I shall be the examiner and you shall be the subjects. You have to realize that this was specifically conducted on four-year-olds. We'll see if you do as well as the four-year-olds. I shall show you a picture. If I show you the picture, I also tell you the sentence. I'll show you a second picture; then I'll ask you something.

Here is a Zuck. Now there are two Zucks. Here is a Nuche. Now there are two Nuches. Right. This character can Hoort. Yesterday he Hoorted. Very good. Now that character on the other hand can Wump. Yesterday he Wumped. Now, many of the four-year-olds who were in this study did exactly as you did.

What I would like you to do is to look at the last three. Tell me if you maintain consistency in what you do. Some people say yes and some people say no. All right, who says no? What did we do differently? All right, so there are differences in the appearance. Now I want to concentrate, and we're going to say to them. Tell me if there are differences in sound. How many syllables in your group words? One each. How many syllables over here? Two, one, one. Now, why in the world would you find something so interesting with syllables. If we start out with a one-syllable word, why did you decide one time to give me a two-syllable word and the other time you didn't. Can you tell me why you did what you did?

Previously exposed to language by listening to the language of our environment, we act on a cognitive level. We act on the language and we discover the principles of that language, but we don't discover those principles in rule form. We internalize the meaningful dimension of that, and we produce it in sound.

But notice, what sound did you give me here? What does that sound stand for? "t." What letter does that sound stand for? "d." All right. So here you gave me a second syllable where you added; then you turned around and gave me a sound that's associated with "t" and finally the sound associated with "d." So, <u>all</u> those differences somewhere have been internalized. Many of the four-year-olds demonstrated the same kind of differences and discovered our first principle.

Very crucial in language arts is the realization that the knowledge we have about language is cognitively acquired. We act it on our envirnoment. We attend it to the known, and we internalize those principles. So, language is developed through cognitive skills. That then leads us to the realization that, if one had to learn language cognitively, the differences in languages, in spite of the fact that they exist on the external level, are not in cognitive awareness. It takes the same kind of cognitive task to learn a different language structure as it does to learn whatever we want to call standard language. And one of the myths that, as

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educators, we are responsible to eliminate is the position proposed by council that there is a definite language. Languages are different. It takes the same cognitive task or skill to internalize one language as it does the other. Language is a cognitive task. Now, Study 2 we'll use to develop our principles for teaching.

You're going to take the role of some students in a graduate course on research. I'm going to ask you to scrutinize the design of this study. When I'm through describing it, you react to it in terms of its design. All right? In other words it was a linguistic test measuring what the child utilized in his/her language at the time before the experiment. That same format was used for both testing. The two experimental groups were labeled "expansion" or "modeling." What happened was that the pre-schoolers had a visit by a doctoral student one afternoon each week. The doctoral student would bring a book filled with pictures. The child would look at the pictures and tell about the pictures. The experimenter, in the "expansion" group would, listen to what the child said. If the child were to look at a picture of a baby that was crying and the child said, "Baby cries" in the "expansion group," the experimenter would say, "Yes! The baby <u>is</u> crying." In the "modeling" group, however, if the child were to say that the baby cries, the experimenter would say, "Yes!"

Now, I would like you to sit back when I say and agree to take the post-test. See if one of the experimental treatments tends to relate more to the test. "Expansion"? Yes! The baby <u>is</u> crying. Smiling? Yes! He likes to smile. Is one experiment more connected than the other? Which one? Our criticism here is "be careful." You've got one that sort of relates directly to that test. So which group would we expect to have done better? In actuality, this group did better.

We do not direct and zero into grammatical elements in and of themselves. When we want to develop sensitivity to grammatical elements, we do not do it by

emphasizing or directing attention to that grammatical element. We do it by zeroing into the meaning that's connected with that entire discourse.

Today, we will utilize these two investigations, one highlighting the realization that one of the languages is cognitively learned and the acquisition of language demonstrates the potential to learn. They bring to us that loud and clear "I can learn." The second dimension, if we develop our strategies, is that we must be sure that our emphasis is placed on meaning. In spite of the fact that we want to develop sensitivity to language and expand language awareness, we do not do it by zeroing into the grammatical element. We do it by looking into meaning. Listening, speaking, reading, writing are the four components of language arts. Each area develops along the same lines. However, it is my listening knowledge that I took with me to learn my speaking. My listening/speaking becomes the basis for my reading. And my listening/speaking/reading should be utilized to develop my writing. The activities that work with one, we should use to work with them all.

One of the areas that many researchers and theorists adjust for the developing of listening/speaking skills is the use of a puppet. The use of the puppet enables the child to take on a different role. The use of the puppet allows the child to be put into situations where, as colleges have found, the child gets a lot out of that puppet. A puppet is also used as a great tool for instruction. Children can relate well to a puppet. In spite of the fact that we are big children, we are going to be little children today. I'd like you to meet a little friend of mine. My friend is Tooche.

"And I am going to work with you today?"

"Tooche, you're going to work with them. What is it that you're going to want them to do?"

"I'm going to give them a story. And they have to read it."

"All right, that's it." She is going to give it to you, and you must read it. "Any old way, any direction?"

"Oh yes!"

"What is the direction?"

"You have to read very fast!"

Quick reading. You are going to see a paragraph. You will not allow yourself any time to think about it. You've got to keep going as quickly as possible. And as I pull down each line, jump right in, don't fight to read ahead. OK. Someone volunteer to get our lights out.

"All right! Are you ready?"

"Are we ready?" Let's go. Nice and loud, and move on with me. Ready? A little louder than that and a little quicker. Ready? Let's do it in unison. (Everyone talking in unison)

Any thing happen there? What happened there? OK! So the sentence started out with arrows. Right away we thought, "Aha! what goes with the arrow? A bow." Now, what did we have to change it to? What did you use to change to concepts there? Now, move on. Let's start with Base Star Henry. Ready? (Talking in unison)

What happened? What did you get in mind there? What did you have to do? (Talking in unison) Would you like that after a minute, a rapid examination? What kind of examination? OK! After a minute but rapid examination? (Talking in unison)

All right. How many thought about saying "dove"? That passage obviously was designed to set you up in a situation where you are going to make some errors. It was designed to give an insight, though, into what each of these areas--listening, speaking, reading, and writing--actually consists of. There are subsystems to each area. Successful listeners, speakers, readers, or writers utilize three subsystems

and they utilize simultaneously. That's what consitutes a successful communicator.

Notice that we've already recognized one reason that we change when we went to this "making a bow." We got to the words, "to a small girl." What part of speech is 'bow'? A noun. All right. Now, do you make a bow too? We make a bow for someone. So, again on an unconscious level, when you internalize that "to a small girl," you realize the need for reversal. You go back and you make it fit into the girl. The same thing here when you get to this, "read to the boy a car." Now, "after a minute"-- beautiful expectations. "After" is a clue of time, "minute" is a time word. So I expect it to be after a minute. It's not until I get down here, "but rapid"? "Rapid" is a descriptive word. Examination. Now wait a minute. When did we ever have a minute examination? An examination can take a minute, but it's not a minute examination. All right, then finally "does." When we see "d," "o," "e," "s" in the first word of the sentence, we predict that it will ask a question; so we say "does." It's not until we get here that we change to "does." What we've done in the process of changing is to utilize one dimension of that process. We call it syntax. Grammatical knowledge refers to our syntactical knowledge. Now, when we look at "b," "o," "y" or "b," "o," "y," "s," we all pronounce it the same way. Why? We utilize phoneme knowledge connected with a letter.

We called this graphophoneme knowledge or the sound/symbol association. The one strong element that made us change each time was the meaning. And that's called semantics. Semantics is meanings. Syntax is grammatical information. Graphophoneme knowledge is for reading and writing, and phoneme knowledge is for listening and speaking. It becomes the basis for the utilizing of all three to produce acceptable communicators. Each of these three then should be developed in the frames of strategies that we utilize. One last guideline that is not a research dimension but a theoretical position is proposed by Brunner. I don't know if anyone likes Brunner as much as I do. Brunner has provided us with such

great insight into children. Brunner starts out by saying, "Let me tell you what the child is like that's going to be in your classroom that you're responsible for developing educationally. 1) That child has intrinsic motivation." That means that the child was born with an innate need to act on his environment.

That's what the study shows, that that's how children learn language. They learn it by going out and acting on it and discovering something. Brunner proposed that children are innately motivated. Then we add the classroom teachers who heard that and said, "Sorry, Brunner, but I got a bunch of kids sitting in my class. No one's going to tell me they're internally motivated!" We stopped with the first characteristic. Brunner gave us another kind of characteristic. The second characteristic he labelled competence: That children will drive themselves to do those things that they've learned they can do well; they will avoid those things they don't do well. Do we have an impossible situation? Brunner said, we must take it one step further. Not only must we look at the child, we now must look at the teacher in light of the responsibility the teacher has to react to the nature of the child, the child's intrinsic motivation or his competence. That means that the teacher's new responsibility is to provide an educational or environmental experience in such a way that the child realizes that the risks he or she must take will not be dangerous. Brunner's terminology. What does he mean? You've got to devise your educational strategy in such a way that you let the child know you've prepared it in a way that he or she will succeed. That lends itself to the whole foundation of Brunner's testing out.

He turns to us as educators and says, "You've got a tremendous responsibility. It is your responsibility to know the content which you teach so well that you can see it step-by-step. You can cognitively see the progression. Not only that, you can see the prerequisites one must bring in order to be successful learning that.

So, here you have the child; here you have what you're going to teach the

child. Use what we know about natural learning. How did children learn language? They learned it by acting on known experiences and developing some principles. That's going to be the basis for our activities today.

Children must discover language principles. They must discover them by acting on known elements. There must be some sequence to this; so we start them out at an appropriate level, but we don't let them remain there. We move on, and we take a tidbit of Piaget's view about how we learn language. Piaget said it is like the way we process and store experiences. We must move from vague concepts of language and become more and more precise. That's that whole schemata formation which is really class formation.

We're going to take a look at a videotape that we were asked to do before consulting in the Cokeville Public School District. This is an activity for kindergarten children. I'm jumping into the middle of the 20-minute tape. I want to take only a few minutes to let you see that principle appear at a kindergarten level when children have had an opportunity to meet, to play with a puppet, and to play a game. The game is over. It hasn't been "teaching," but it's been an educational activity, in which they've played a game. Now, we'll see a small segment, and then I'll stop the tape.

". . . that's my friend and my teacher, Dr. Applegate, and then we can tell her that we've played a game today. Want me to call her? I'll call her now. Dr. Applegate! Dr. Applegate!"

"Hey Pagrician, I heard you calling."

"Oh, I'm all excited!

"You're excited. Why are you excited?"

"Because I just took some tests."

"Let's take a look. Oh! I see. Have you been playing with my friend, Tuchi?

"Oh, we have!"

"Have you had a lot of fun with Tuchi?"

"Oh, we did. We played a new game!"

"You played a new game with Tuchi? And what was that game you were playing?"

"Well, we played Restaurant."

"Restaurant? Did you have fun playing the game Restaurant, Pagrician? You would really have to tell me about that because I don't know how to play Restaurant game."

"Well, we had to drink a juice."

"Oh, you all drank the same juice?"

"Oh, oh. No!"

"No? Well, what did you do?"

"You had to pick a juice; you could pick one."

"Oh, you get to pick a juice. Did you pick your juice?"

"Oh, yes!"

"Well, did you pick any juice that you wanted?"

"Oh, no! No! 'Cause my restaurant don't have a lot."

"Well then, what did you do?"

"You could only pick tomato juice or orange juice."

"Oh, you only get tomato juice or orange juice. Hmm. That's nice."

"That's not all we ate. You have to pick a fruit."

"You picked a fruit?"

"Oh, and then some bread, and eggs, and meat."

"That game that you just played makes me think of how very important it is what we do when we think."

"Oh! Are we smart to make up a new game?"

"You are. You're very smart to make up that game. Do you know, when you think about that game you played, we could make a book. We'll make a book, and on the pages we will put the things in your restaurant game."

"Oh! I like that!"

"All right, let's start by looking at the title that our book should be called. Let's look at the title, Tuchi."

"Oh, Breakfast at a Restaurant!"

"Right, boys and girls! The title of our book is 'Breakfast at a Restaurant.'"

"Oh, good."

"Now, what we'll have to do is figure out what you did when you started your game and make sure that our first page on the book shows what you had to do. Now remember, what did Tuchi make you pick?"

"A juice."

"A juice. All right, let's look, then, at the first page of our book and show the different juices that you could pick. OK?

"Oh, there it is."

"Right. Here, first, what could you pick?"

"Tomato juice."

"Or what else?"

"Or orange."

"Good. Now, one more time, what must you do, pick from?

"Tomato or orange."

"Boys and girls, could you say those two juices that you could pick from. Let's say those two juices now, together. Ready?"

"Tomato or orange." (stopped video.)

We got the actual booklet that they worked with. What is going to happen now is that the children will be guided through to construct a book. This was their first page that they were looking at. They had this on a sheet by their desks. And what they're eventually going to do is say, as the waitress would, you can have tomato or orange. You can have grape or apple; you can have toast or a muffin.

"What about your egg?" "It can be fried or scrambled." What about the meat? "Bacon or sausage." And then they're going to be led to discover what the waitress wants a diner to do each time. They realize the meaning each time they have to pick.

This time we're going to go back and see them again. See now if you can listen to the words that we use each time that lets us know that's right. We did have to pick. And then the children discover that or is the clue word. They must make a choice. They must use the word or. You provide them with an experience in which they are involved, actively involved in. That in turn leads them to the opportunity. The follow-up for this was cute because then they went through and picked pictures from the magazine and they had to come up with choices. In order to find two things that the waitress would say, they would come up and say, "you can have Cheerios or Wheaties." So they had the class, and then they had to turn around and use the word or.

Now, Brunner says start with the lowest level, develop it in a way. After the children have developed in a meaningful way and have learned that information, this activity, made by a student of mine, is designed to work with some older children on another level. The children read a story. Here are some phrases. The sorting of these phrases is through a color code. We'll hold some up here and look at some down here. When the children are through, they realize that all of the words here trigger an option and all the words here trigger contrast. The generalization is then reinforced through the bunny rabbit that or can be one or the other. So we're starting out demonstrating that any concept, language related, almost always moves from a more global to a more precise. Our task is to help children develop more and more of that precision of language awareness.

The next activity I'd like us to take a look at has to do with a suggestion made by and in a textbook. Pearson is the author. The book is called Understanding Comprehension. It's a great book for teachers who need to have

some insight into the practice of comprehension; it has some good ideas. My students were going to work at a school that's right in our backyard. It's a Catholic school. Three of my students were going to go into one class, a special class for children with severe problems. I sent three of them there. I figured that way they'd have good experience and they'd be able to work together and support one another. Their task was tell the teacher that they had to develop a comprehension activity to help develop critical thinking, thinking ideas. My students came back. "Dr. Applegate, we can't do comprehension because the teacher says they don't know how to do comprehension. The only thing we can do is work with consonants, "cause they're not ready to do the comprehension."

You know, in some ways I was really delighted that that had happened. St. Joe's Jesuit School consists mostly of Catholic children. Many Catholic schools capitalize and emphasize smarts. Their first few weeks with me in class, my students are bucking me. But we've got to start with phonics because that's where it is. If a youngester doesn't know how to sound out a word, then he can't read. We're saying let's move on until we see if we can find more information. Let us accept that and see if we end up agreeing. By the time we get ready to move out, my students feel more comfortable about the excitement that is related to language activities. When they start with thinking, it's more thrilling and challenging. So, they were disappointed that they we're not going to be able to do that.

I said, "Well, let me see." I called the teacher and asked, "Is it all right if I help the students develop activities that they can do?" She said, "Well, Dr. Applegate, go ahead if you want to, but I just want to warn you now they're not going to be able to do it. They can't. They can't do those kind of comprehension tests." I told her that we'd give them an interesting story that she felt the children would enjoy. And this was it, The Witch's Christmas.

It's a cute story about some children who have a witch as a neighbor and the

exciting life they have and that she causes them to have. The story starts about the witch's life. The children's life is unique, starting back from Halloween. When they go out and have pumpkins, their pumpkins are always different from the other pumpkins. When snow time comes, the witch makes life exciting because she will change the snow. When the children have snowball fights, things are different where the witches play. The story moves on to Christmas and the excitement that the children have when the witch takes them out hunting for a Christmas tree and the fun that they have watching the magic that she is able to do on their Christmas tree. Then they go Christmas caroling.

As they're Christmas caroling, when people come and see the witch, the people in the window aren't too delighted to have a witch there Christmas caroling. Bit by bit, the witch helps them go shopping and get ready for Christmas. They're waiting for Santa to come. They're wondering what happened. The witch intervenes, finds her broom, and goes out searching for Santa. She discovers that poor Santa has collided with a spaceship. He is trapped and cannot deliver the toys to all the boys and girls. So again the witch intervenes and turns her one broom into many brooms. Each reindeer has a broom, as does Santa. They're able to deliver all of the toys. So, everyone has a happy Christmas because the witch has intervened.

The children had work to do then in a folder. The teacher had a folder in which she had made pictures related to each of the ideas. The children had to discover each idea based on the picture that triggered a message from the story. Those pictures were left on the lefthand side folder. On the righthand side folder, mixed up, were some other pictures. It was exciting, watching the children see something that the teacher had taken time to make up, special like that. It was just so exciting to us. "Woooo! Look at that!" My students are trying to build up their own resources for the time they're teachers. They see how kids love these kinds of activities. The children had to match pictures, the cause/effect, and

produce a sentence that combined the ideas. Such and such; so such and such. The children developed those five cause/effect sentences. I specifically, by the way, went into the classrooms with all this activity and found the excitement as I was watching those children. It was really cute. At the end of the lesson, the children had five sentences that were beautiful giving the cause/effect relationship.

And then, one wee youngster looked at another child and said, "You know what you could do now? You could put another picture here of this because that's why that happened!" That demonstrated that not only could the children see that one cause but they could see the chain of a cause and effect. The kind of thinking demonstrated by these "severe problems who cannot think" was exciting to watch.

Then from there, the teacher developed the kinds of sentences that would generate sight vocabulary. The children worked some time until they had mastered some sight vocabulary words. They developed the sentences, and each sentence would contain a word, and each of the words was looked at in isolation. When they were through, they had "Santa," "so," and "sad," known sight vocabulary words.

Now, after we know it, we quickly learn from research. How do we already learn language? By studying known developing principles. This is what the children did and had absolutely no difficulty dealing with that phonetic element. They dealt with phonics only after they had meaning and they had mastered the sight vocabulary.

One of the sad things that happens as a result of people who say 'don't teach isolate phonics' is people in turn saying 'oh that means don't teach phonics.' Watch how you teach phonics and watch when you teach them. You teach phonics as children master sight vocabulary words. Provide the educational experience in such a way that the children can make a discovery! They have these sight words, and each word starts with the letter "s," but they know that. They've mastered that; now we can take a look at the differences, rather the casual relationship.

Here we're seeing cause/effect with children identified as special with severe problems.

Now, psychology has demonstrated that the one mental process which is most negatively affected by an anxiety is memory. You put yourself in a situation where you're nervous, and you watch what happens to your memory. It's so frustrating. You're in a situation when you're nervous, when you're getting worried and you're not remembering. It's the same with children. Children who've experienced failure in the academic situation should have instructions that guarantee they incur memory. That should be the last and final dimension.

Now, let's take an example that we can all have. I'm thinking of the concept "traffic jam." Give me a cause for a traffic jam. "Accident!" All right. That's the cause, accident. Give me an effect of the accident causing a traffic jam. "Injury." Injury, all right. Who was injured? "A driver." OK, a driver was injured. "The window was smashed up." OK. So, we had an accident which caused a traffic jam. In turn a new accident was caused. Now, I want you to think about that. When you're through, I'd like a volunteer who could give that information in one sentence, but the sentence has to fit the word "because" in small letters. All right? Who can give me a sentence? "The traffic jam was caused because the driver was inattentive." All right, we've got it. "The traffic jam was caused because the driver was inattentive." Keeping that in mind, use that same practice to fit this situation. Now, notice what's happened to the position of the phrases within the sentence. Think what happens when you change that position.
Did you take a look at how events appear, literally, in that story?

Thinking helps precision in context. There's an overlap: thought, language. So, the more precision I acquire in my oral language, the more precision I also develop in terms of my thinking.

In this packet there are sentences that are scrambled. The students must make three sentences. After they've produced the three sentences, they may have

to decide which punctuation marks would be needed by that. I thought of this activity after I had had a bad experience with one of my students at Lincoln University.

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We need constantly to reinforce that we're not throwing a rule. Children must be provided with the opportunity to internalize and to discover that principle about language.

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Learning centers are probably one of the better ways that we have to help children find a love of learning and work with language. That love of learning, with language, can slowly begin to be internalized.

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You recall Pearson's idea about how we combine things, that language or comprehension occurs by detecting the relationships that exist and that we use those relationships as the basis for combinations of ideas.

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A number of activities are included in a packet, called "Learning Center Activities." If anyone is interested in that, make sure that you sign and I'll mail you a packet. These packets also have other kinds of activities.

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One of the best activities research has demonstrated, of being effective in developing language awareness, is the use of the schema map. Now, notice how the schema map can be used beautifully to open the experiences of the child to focus on key words, key concepts crucial to the story. Reading with that purpose in

mind, children are active readers; they aren't sitting there to pronounce words. This schema map, then, can be used as a basis of a sentence. And the schema mapping, again, is very supportive of theory by both Brunner and Piaget.

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Reading skills of high level should require the use of knowledge within that context that you have to act on, to pull together, and to synthesize. So, this kind of an activity enables that to happen within the classroom.

I've developed and produced some activities that you could have. These are here. I am sorry that I have run out of the other language experience activities and learning center forms, but I will be glad to mail them to anyone who would be interested in having them. Those, by the way, are mainly elementary.

Thank you very much.

WHO DECLARED WAR ON EXCELLENCE IN EDUCATION?

Dr. Jay Scribner

Are we at war? Who are the perpetrators of this war? Wars are great catastrophes. Who declared war on excellence in education? Was it the liberal establishment? The professional educator? The poor?

Some think the war on excellence coincided with the war on poverty. Those who fought and ultimately lost the war on poverty were the perpetrators. The liberal establishment who concentrated their efforts on eradicating poverty, abolishing discrimination, eliminating slums, hunger, sickness, and disease caused this great catastrophe. Excellence was unabashedly sacrificed for the egalitarian notion of where one starts in life should not affect where one ends in life.

Others think the war on excellence was conducted as basically a covert activity by professional educators. Desegregation, open classrooms, humanism, value clarification, social promotion, personal and vocational development were designed to divert attention from the basics and "impose on America the mediocre educational performance that exists today." Of course, teachers were too busy unionizing; and school administrators too busy adding new curricula involving sex, drug, cross-cultural, multilingual education.

Still others think the war on excellence must be blamed on those who fought in the earlier battles--the poor, the Blacks, the Hispanics, the Asians, the Indians--those who sought equality of opportunity and, if not an even, a running stance on a starting line with those with well-lined pocketbooks whose skin color, religious and cultural values are often said to represent the "dominant culture" of America. The fight for civil rights, civil liberties, and inclusion into the American Dream created the momentum, civil disorders underscored the frustration, and the temptation of

maximum feasible participation gave new life to the meaning of power, influence, and persuasion. Legislated advisory councils for parents of poor students, bilingual students, handicapped students, and ethnic commissions representing local constituencies led inevitably to the evolution of local, state, regional, and national special interest groups demanding equality of educational opportunity in America.

Wars are great catastrophies. If you analyze their outcomes, you will find victory is hardly distinguishable from defeat. If we pursue elitist, exclusionary policies and programs in our quest for excellence, I have a feeling the missing in action will rise again from the rubble of poverty, from the urban and rural areas to make their claim on a share of the American Dream. I think that is precisely what Jesse Jackson is telling Reagan and his Democratic colleagues, notwithstanding the formidability of Walter Mondale. Defeat is dismal, but it has a habit of laying its heavy hand on the victors as well as the vanquished. I submit there never has been a war on excellence in education. What we are witnessing are shifting values, the profound tension of our democracy, excellence versus equality of opportunity. Despite the rhetorical use of these terms, it is important to recall that both principles come from Thomas Jeffeson: the Declaration of Independence tells us, on one hand, that all have been created equal and, on the other hand, the no less "self evident" truth that "there is a natural aristrocracy" albeit based on "virtue and talents," not on birth or wealth.

From the first comes the "egalitarian" - drive towards equal opportunity for all and, therefore, toward the elimination of any artificial barriers to the full development of the individual capacities of each member of society. From the second comes the "elitist" view that these natural talents are not evenly distributed among the populace and that therefore equal opportunity for all implies as well special opportunity for the talented few.

Now in the wake of Coleman's explanation of family background as the primary determinant of educational achievement, Christopher Jencks' conclusions based on Coleman's data that schools were not the great equalizers, and Jensen's outrageous arguments concerning genetically endowed abilities, it is possible to understand why the public soured on throwing money at compensatory education and open classrooms infused with "a humane and democratic spirit." In her historical account of the Troubled Crusade, Diane Ravitch contends ever so pointedly, "the pursuit of excellence was overshadowed by concern about the needs of the disadvantaged."

Clearly the pendulum has swung away from large scale investments in education. Government, particularly the federal government, no longer has a major responsibility for equal educational opportunity, civil rights, and the like. We are encouraged to turn to big business and industry in our rush for support of excellence in education. We are asked by neoconservatists, better known as the New Right, to return to traditional values, promote prayer, creationism, textbook censorship, discipline, and the basics in the classroom of America. We see how President Reagan's newly constituted U.S. Civil Rights Commission has or is in the process of dismantling policies on affirmative action and civil rights. Early in Reagan's administration two senators were advocating legislation that would have authorized the reopening of every segregation case since Brown v. Board of Education, thus dissolving each case and prohibiting judges from ordering any new remedies on segregation.

In addition to the New Right's counterattack, legislation, and court decisions, reform proposals on the education profession from prestigious commissions, committees, and task forces have occured. Their recommendations center around "back to basics," more time on task, more attention to the so-called hard disciplines in teacher training, more mathematics, science, foreign languages,

a new requirement of computer literacy, and higher standards for everybody.

A re-examination of the curriculum as it applies to the needs of all students in the public schools is needed, especially to the needs of the often ignored giftedly talented student. A re-examination of our commitments to compensatory education is also needed. The stimulus for the push for "back to basics" was found to be the top rated goal among all groups of teachers, students, and parents. So the focus on "back to basics" in the Nation at Risk and the other reports appears to be in agreement with what the key groups in education already rated as their number one priority. I believe we can maintain excellence in intellectual development while at the same time enhancing other goals of the recent past that society demands of the schools. What goes on in the classrom is clearly a reflection of what we value in America.

So when someone asks who declared war on excellence in education, instead of indicting teachers, parents, students from low income families, or the liberal establishment, I think we should start by admitting that this country has an unfinished agenda. Until we are willing to recognize it, to do something about it, and to stop diverting attention from it, we are in no position to indict our schools for "unilateral educational disarmament." We must recognize that schools do make a difference. Maurice Berube reported in a recent issue of The Urban Review historical evidence on how some schools have been able to raise low-income student achievement.

We must recognize that schools are complex organizations, that the teaching-learning process is a complex undertaking, and that humans are more than test scores on dubious tests.

Finally we must recognize that we cannot leave equal educational opportunity to chance. The federal government's earlier commitment to equal opportunity and human dignity was trivial compared to our current commitment to

defense. We need a sustained commitment to a systematic national education program from infancy to adulthood for all people. Our commitment cannot swing with the movement of the political pendulum. Our investment in excellence with equity means too much.

What do we mean by excellence? We cannot promote excellence for all people by re-packaging failed programs--"new, improved education." We cannot change and yet remain the same if we are to contribute to lasting educational advancement and improve the quality of life for all Americans. But, we will not renew the American dream by changing for the sake of change. We must know where we are going, or we will end up somewhere else. We are on the brink of a "learning society" in an "information age" precisely because some committed, clear thinking individuals embraced the promise and the substance of change. We need leadership that makes a difference. We need to go to work on the unfinished agenda for accomplishing excellence with equity.

First, we must ask hard questions of our constituents and ourselves: What do we mean by excellence? What do we want when we are pursuing excellence? Then, we must embark on our mission for meaningful changes.

I believe that we have a "blueprint for change" in the realization that education is possible and that education has potential for substantially improving lives. We are less the nation at risk and more the nation at the crossroads. We know where we do not wish to go. We want to move forward, carefully and systematically pursuing our ideals and testing the practical consequences of our beliefs. We must change our unfinished agenda into an action agenda. We must forge a compact for educational excellence with our blueprint for equitable change.

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